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100th Anniversary of the Birth of
Alexander Graham Bell
March 3, 1947

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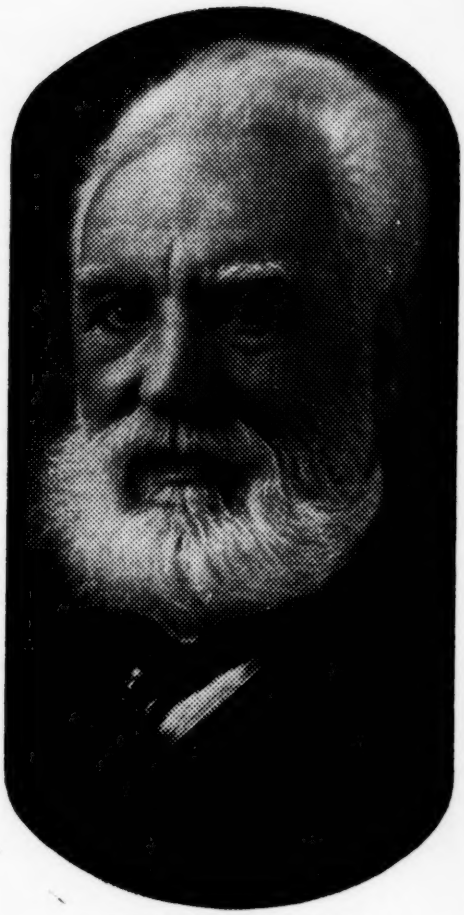

ALEXANDER GRAHAM BELL
by Moffett, 1918

He gave the world a new voice

Alexander Graham Bell was a teacher of the deaf. He was also a trained scientist who made it possible for millions upon millions of people to hear each other by telephone.

The telephone brought something into the world that had not been there before.

For the first time people were able to talk to each other even though separated by long distances.

Horizons broadened. A new industry was born, destined to employ hundreds of thousands of men and women and be of service to every one in the land.

Alexander Graham Bell was a great humanitarian, not only as a teacher of the deaf, but in his vision of the benefits the telephone could bring to mankind.

Bell's vision has come true. It keeps on being an essential part of this nation-wide public service.

BELL TELEPHONE SYSTEM

The Journal of Higher Education MARCH, 1947

Report on the Program of Unesco

By GEORGE D. STODDARD

A Report of the General Conference Held in Paris

THE complete report of the Program Commission of the United Nations Educational, Scientific, and Cultural Organization was presented at Paris, on December 8, 1946, by Archibald MacLeish, vice-chairman of the United States delegation. This report, which was adopted by the General Conference with minor revisions, is the first formal program of inquiry, public service, and development under the auspices of the Organization. The execution of these proposals now waits the approval of a modest budget—about $7,000,000 for the current year.

The history of many of the projects approved in Paris can be traced by reference to a booklet issued by the Preparatory Commission, entitled *Report on the Programme*.[1] Under the leadership of Julian Huxley, who now becomes Director General, this Commission identified and recommended numerous proposals.

During the past year of preparation, the purposes for which Unesco was founded have come to seem even more vital than they appeared to those who, in a memorable preamble to its constitution, proclaimed that the defenses of peace must be constructed, if they are to be constructed at all, in the minds of men. Multitudes of people in the world are still suffering. Dissension is a mark of the times. We need to find out, and find out soon, how wars begin in men's minds. We need to put our newly found knowledge to work in erecting defenses of peace which are understandable and practicable.

Hence, it is crucial that the program be developed in neither a segmental nor a temporary fashion. In the large, it will contribute to freedom and to learning; it will contribute

[1]Through Mr. Huxley (19, Avenue Kleber, Paris) or Walter C. Laves, the recently appointed Deputy Director General, readers should be able to obtain all Unesco documents. Also, Charles Thomson, secretary of the United States National Commission, is in an excellent position to render liaison services.

to an understanding of human relations and of the social structures which express the shared purposes of mankind. As part of this interchange among peoples, the more fortunate will help others to obtain books, teaching materials, tools, and other means of scientific and cultural development. Above all, the spirit of Unesco looks to the future, envisaging for children and youth a better start in a better world.

The Program Commission of the General Conference considered the plan of action submitted to it by the Preparatory Commission, which was established in November, 1945. Additional proposals were submitted by the delegates from member states in attendance at this first meeting of the General Conference.

The proposals of the Preparatory Commission were grouped under the six heads: education, mass communication, libraries and museums, natural sciences, human sciences, and the creative arts. All proposals were analyzed and reviewed by six subcommissions of the Program Commission.

The Program Commission recognized that Unesco may start its work on a relatively small scale, but it should undertake with dispatch certain projects which will contribute to its central purpose. At the same time, it must lay a secure foundation on which an expanding structure of international co-operation may be erected.

THE first of the six areas discussed in the *Report on the Programme* is education. While its field is vast and the need of children, youth, and adults for learning never ceases, the subcommission on education selected only eight proposals to which it gave the rating "most urgent." Of these, several are urgent in the sense that to be of maximum effectiveness they must be undertaken at once; for example, the appointment of a committee on health education to work with similar committees in the United Nations and its various agencies. Likewise, a study of handicapped children in war-devastated areas is something which, if it is to be made at all, must be made quickly.

There are three major projects that may be regarded as representative of the principal contribution of education to the program of Unesco in the coming year. The first is a study of education for international understanding at all school and college levels. We have learned through experience that educational policy is a matter of international concern. Our best protection from the evil effects of education for aggression is to develop a constructive program for international understanding. This work will be done in the classrooms of the elementary and secondary schools and higher institutions through the contributions of teachers. To get this study under way, the Secretariat is to invite a panel of experts from the member states who will act as consultants. From these studies, the most successful practices discovered will be made available for the improvement of instruction designed to influence, as directly as possible, the education of youth all over the world.

A second major enterprise under the general heading of education is the development of a world-wide program in fundamental education. In the words of the Preparatory Commission, "the Charter of the United Nations points out that stability and well-

being are necessary if peaceful and friendly relations among the nations are to be created. Such conditions imply advances in economic and living standards as well as the universal acceptance of fundamental human rights and freedoms—the present educational inequality represents a danger to the peace of the world, which cannot become one if half of it remains illiterate."

Such a program will involve, in addition, new forms of education, especially for adults, in health, agriculture, and citizenship. The first step in this great project will be the appointment of a panel of experts, most of whom would not be permanent members of the Unesco staff. On invitation, they will assist in the development of programs of formal education, making contacts with workers in the field. The central staff will assist in providing suitable reading materials, in the clarification of language difficulties, and in the utilization of all forms of instruction—books, pictures, films, and radio—which may serve the purposes of the program. Assistance will be sought in collateral fields, such as libraries and the social sciences. As the program advances, follow-up work will carry the new skills of reading and writing to a fuller implementation of everyday life and, further, to a familiarity with international problems.

A third major project proposed by the Education Subcommission is the improvement of teaching and teaching materials through a comprehensive revision of textbooks and related devices. Here the emphasis is on a positive contribution to teachers, supervisors, and curriculum-makers who desire to enhance good feeling among neighboring countries. This project calls for a clearinghouse for the dissemination of information on the revision of textbooks, starting with the gathering together of a full set of the most commonly used textbooks in history, geography, and civics. The revision of textbooks will extend from the individual teacher working in his own locality to the activities of national and international voluntary associations of scholars and professional workers and to bilateral and regional agreements which governments may formulate.

Finally, there is a provision whereby failure in any of these major projects would make Unesco responsible for reporting to the General Conference instances of textbook usage considered inimical to peace among nations. Neither censorship nor police power is involved, but only the duty to call to the attention of the members of Unesco teaching situations which are contrary to the purpose of the Organization and dangerous to amicable relations among its member states. This provision was bitterly debated in Paris, but it was adopted by a substantial majority in the Education Subcommission.

IN ALL countries, people are hungry for information about what is happening and what people are thinking in other parts of the world. The war has limited the distribution of books and periodicals. Even in time of peace, the channels of communication are inadequate. The Subcommission on Libraries and Museums recommended two major attacks on this problem. One objective is the removal of barriers. A committee has been set up to study the problems of copy-

right. It is hoped, too, that such unfortunate hurdles as tariffs, customs formalities, and high postal rates may be reduced. Above all, an attack will be made on the censorship of materials that move across national lines.

Under this program, Unesco will assist libraries and schools to obtain books, periodicals, works of art, and museum objects of all countries; it will attempt to match needs with the sources of supply by assembling bibliographies, catalogues, and museum lists. In this way, librarians, museum directors, scholars, scientists, and artists will know what exists in various parts of the world and how to gain access to it. This will call for photographic reproduction and lending on a scale never before undertaken. It should lead to the development of an international loan service. While such services have a special significance during this period of reconstruction following the war, it is believed that the demand for them is permanent.

A second major project is the promulgation of mass education through public libraries and public museums. Clearly, this program must be brought into a dynamic relation with the programs of fundamental education and of education for international understanding which have been described. People of all ages will respond to this type of education. Unesco will supply information and stimulate and guide the work through educational leaders and labor organizations, as well as through the professional work of librarians and museum workers. In co-operation with other fields, such as science and education, museum and library staffs will encourage an interchange of personnel and of students interested in such work.

ALTHOUGH the printed page, whether in book, pamphlet, or newspaper, is still the greatest medium of mass communication, to this must now be added new media potentially of equal force—namely, radio and the motion picture. The Subcommission on Mass Communication, recognizing the growing demand for these marvelous products of technology, recommended a comprehensive program consisting of three major sections.

The first proposal is the establishment of a world-wide network of radio broadcasting and reception. In the world of tomorrow this will enable leaders in education, science, and culture to reach all peoples who can be moved by spoken language or visual image. This network will allow people with ideas to speak with a clear voice throughout the world. The project, as recommended, does not set up such a network; it initiates a fundamental study of the problems involved.

A second project calls for the development of a world map of communications. It attempts to answer the questions: By what existing channels may an idea spread over the world? How many people are reached by such media as newspapers, periodicals, radio, and motion pictures? What inadequacies exist among these media, and to what extent has the war damaged the facilities which have previously been available? As answers are found, an attempt will be made to examine the ways in which existing inadequacies can be eliminated.

Finally, as the technology of these channels is developed, what restrictions, artificially imposed, will be found to handicap the flow of information? These media cannot be

confined within national boundaries except by irrational devices that clearly interfere with the major purposes of Unesco. It is held that a free flow of ideas will make for truth and help to free the world from ignorance, prejudice, and the fear of other peoples.

SINCE the natural sciences comprise a vast field of human endeavor, it was regarded as crucial within the Subcommission on Natural Sciences to make a selection of projects which could be developed within the coming year. In this field, three programs are outstanding.

The first task is to do everything possible to aid the devastated areas in replacing or bringing up to date scientific and technological apparatus, equipment, and publications. This will be accomplished by surveying actual needs and by stimulating the creation of agencies to collect and distribute needed supplies.

A second proposal is to give aid in the interchange of scientists of all grades. Unesco will administer fellowship grants made available to it and will set up a limited number of fellowships from its own funds. It will stimulate, and to some extent subsidize, meetings of international scientific organizations. It will co-operate with international unions of scientific personnel. Traveling panels of scientists will be sent to various countries on invitation. Information will be supplied to co-operating agencies with regard to scientific facilities in various locations.

The research projects envisaged for Unesco may be illustrated by a comprehensive study of tropical life and natural resources in the Amazon Basin which will be undertaken in co-operation with the Brazilian government. It is understood that, in view of the unique nature of this project, it will be started only with the approval of the Executive Board of the Organization. In addition, research will be undertaken on the nutritional problems of large populations, in such countries as India, China, Brazil, and West Africa.

One of the special benefits of these scientific projects will be the establishment of contact and communication among leading scientists and students throughout the world. Countries may find in these developments not only encouragement to do their own planning but a great storehouse of scientific information. They will be able to turn to such projects for practical guidance and for the education of new leaders in the field involved.

THE Subcommission on Social Sciences merged various projects designed to inquire into frustrations and aggressive attitudes which are barriers to peace. A Study of Tensions Conducive to War will include studies of nationalism and internationalism, the pressure of populations, and the effect of technological progress upon the well-being of peoples. It will call for a new type of co-operation among social scientists, anthropologists, geographers, and psychologists, and it will demand, as the work progresses, new methods of investigation and report. In such an elaborate undertaking, recourse will be had to the national commissions of member states whenever possible.

With respect to nationalism and internationalism, the three main ob-

jectives will be: first, to bring to light the distinctive character of the various national cultures and national ideals; second, to help stimulate the sympathy and respect of the nations for each other's ideals and aspirations and an appreciation of national problems; third, to study and recommend for action, possible measures which can bring the nations into closer co-operation, while maintaining full respect for their cultures and ideals.

The study of population will be undertaken co-operatively with the United Nations Economic and Social Council, which has set up a demographic commission. Among the factors which may be identified as forming a part of this problem are the excessive increase or decrease in populations, the effect of migration, tensions created among groups within nations or dependent areas, and problems arising from certain customs, standards, or political restrictions.

Modern technological developments have had a tremendous impact upon social institutions. It is believed that within this framework there may be developing tensions, both national and international, that are thus far little understood. The Subcommission, therefore, proposed a new attack upon this problem, utilizing modern methods of survey and analysis.

Of general interest in the field of the social sciences is the proposal to study means by which there may be established centers in international relations. A comprehensive report on this question, by Sir Alfred Zimmern, was distributed at the Conference. This report could not be acted upon *in toto*, but certain preliminary studies have been recommended for the next meeting of the General Conference. In the meantime, in the Subcommission on Education, teachers' seminars were proposed, together with a comprehensive study on education for international understanding. Some of the work contemplated for the international studies center might well find a place in these recommendations from the Subcommission on Education. Also, the Subcommission on Social Sciences recommended the organization of three short-period courses on international questions, as an experimental measure. The exchange of students, scholars, and leaders in labor and youth groups is also recommended by the various Commissions. From this modest beginning we should be in a position, in the course of a year, to determine the main lines of action on a wide scale.

One of the grave difficulties which must be faced and solved is the problem of beliefs and philosophies. Unesco must not be committed to any dogmatic position in any field or to a philosophy which would exclude the co-operation of other basic philosophies. Its philosophic problem is that of seeking grounds for understanding and agreement about international activities without attempting to convert the world to a single philosophy or religion. Such agreement, moreover, since it is concerned with the defense of peace and the promotion of freedom would, while permitting a multiplicity of philosophies, supply a standard by which to exclude the philosophies of Fascism and Nazism. This is a new and important responsibility for philosophy, directly pertinent to the peace

of the world. It will be the subject of discussion in a conference of philosophers to be called in 1947.

The humanistic group has tied together its basic proposals into a major inquiry on the utilization of humanistic studies and education in building the peace. The Subcommission recommended that, in addition to adequate direction from the central office of Unesco, volunteer workers should be called upon in such fields as history, cultural anthropology, linguistics, and art history and criticism. The long-range purpose is to determine the specific character of the great civilizations of the world, with a view to making evident the fruitful relationships which exist among all cultures. The short-range purpose is to expose the nature and method of what may be termed "cultural imperialism." It is the judgment of the group that cultural conflicts of this broad and massive type are major causes of war.

In brief, while the present year will be devoted to study and consultation in the directions indicated, it may be predicted that, thereafter, a comprehensive investigation of the ways in which cultures may be mutually adjusted will form a project which will have significant proportions.

THE Subcommission on the Creative Arts placed emphasis on the following resolutions:

That the freedom of the creative artist to accomplish his proper purpose as an artist in any nation is a matter of concern to the peoples of all nations, and

That Unesco, acting for and on behalf of the peoples of all nations, will take such measures as are open to it under its Constitution to protect and defend the freedom of the artist wherever it is put in danger.

These resolutions point up the essential problem in the world of the artist. Here, above all, restrictions and lack of communication are hostile to artistic performance or production. The artist in a sense must work alone, but in many art forms he must also work with others, and at all times he must be free.

Attached to this central concept of freedom for the artist, there is the proposal that we use art forms in the schools and cultural centers of the world as a means of introducing to children and youth this universal language, particularly in war-devastated areas. The young will need the refreshment that comes from contact with art forms and from a steady participation at their own level of insight and development. The artist, too, needs not only freedom, as has been previously stated, but practical assistance in obtaining the tools and materials necessary for creation of his art.

What is contemplated for Unesco in the fields of the creative arts is a systematic approach to such problems, using all the resources available to it and calling upon artists, teachers, and producers to assist in the development of the program.

THE character and responsibilities of Unesco are determined by the purpose which is formulated for it in its Constitution: to contribute to peace and well-being by promoting collaboration among the nations through education, science, and culture. Unesco should not be thought of as an

instrument for the promotion of education, science, and culture as ends in themselves, but rather as an international undertaking to advance through education and science and culture, the peace of the world.

Several consequences concerning the character of Unesco follow from that purpose. In the first place, its purpose determines an order of priority in the activities to be undertaken. The relations of men to each other may be treated in three kinds of international collaboration:

1. Collaboration for the *preservation* of men's knowledge of themselves, their world, and each other.
2. Collaboration for the *increase* of that knowledge through learning, science, and the arts.
3. Collaboration for the *dissemination* of that knowledge through education and communication.

In view of the urgency of developing a sense of international solidarity as a firm basis for the United Nations, the major part of the resources and the personnel of Unesco should at this time be expended in activities directed toward the work of dissemination.

These distinctions in functions determine the three ways in which Unesco may operate:

1. As a *stimulating agency*, to encourage existing international organizations and to assist in developing international organizations in fields in which they do not exist.
2. As a *service agency*, to provide an international center to facilitate the exchange of information and personnel.
3. As an *operating agency*, to undertake projects which are directly and immediately pertinent to the peace and welfare of the world and for which no existing agency is adequate.

These distinctions in manner of operation, as indicated previously, make an integrated program essential in the task of Unesco. This integration of the program must be translated into terms significant both in the persons employed on the staff and in the persons affected by the operation of Unesco. The staff should not be thought of as an academic body, capable of satisfying academic requirements comparable to those of a university, but as groups of effective workers in each field of the organization's activities. The staff, moreover, should be organized as a skeleton force to which additions may be made on short-term arrangements determined by the problems under consideration.

Finally, the audience of Unesco must never be restricted to the learned or to students; it should always be the people of the world.

IN ACCEPTING the report of the Program Commission, the General Conference discharged its constitutional function of determining the policies and the main lines of work of the organization. The program adopted (only a part of which has been presented in this paper) constitutes a general mandate to the Director General and to the Executive Board. It will be their responsibility to propose and put into effect detailed plans for its execution.

The projects are to be viewed as operations of Unesco as a whole. Various divisions of the secretariat will have assigned responsibilities, but none has control over any part of the program. There are some projects in which all sections will necessarily

have an interest. For example, Unesco is to stimulate the interchange of persons across national boundaries. Its interest in this interchange is not restricted to one class of persons, such as teachers or scientists or librarians or philosophers; it extends to all.

There are other projects in which the possibilities for integrated attack would escape attention if the secretariat were to be organized in narrowly specialized segments. For example, certain scientific projects are of peculiar significance to Unesco because of its concern with their social and educational values. Accordingly, the Director General and the Executive Board must constantly be on guard to ensure that the unity of the organization in planning and in action shall be paramount.

While we have emphasized the responsibility that now rests with the Director General and his staff, we must make it clear that they have a limited power to carry out this program. The staff will be small and chiefly resident at one place. It can initiate, plan, and advise, but it cannot carry on alone. There is scarcely a proposal here which does not require the support and participation of people in many countries. Member states also have a responsibility which goes beyond that of giving financial support to the organization. They should, by every means in their power, assist in the execution of the program. They have agreed to this in formal resolution.

The success of Unesco will depend in large part on the vitality of the national commissions and other national co-operating bodies within the member states. The national commissions should stimulate non-governmental organizations to take part in the studies and projects here recommended. For example, colleges and universities should be urged to support research projects undertaken by members of the faculty as part of a world-wide Unesco study. All organizations can help by disseminating materials which advance its purposes.

Finally, the Program Commission recognizes that Unesco must work in the closest co-operation with the United Nations and its specialized agencies, and with non-governmental international organizations. By co-operation with such agencies and organizations, Unesco will multiply remarkably the resources available to it. Viewed in this manner, the modest budget of Unesco—modest in terms of the extraordinary purposes to be achieved—may be able to render services beyond measure.

The Inspiration of Unesco

By STEPHEN DUGGAN

SINCE "wars begin in the minds of men, it is in the minds of men that the defenses of peace must be constructed. . . ." This is the inspiring opening sentence of the Charter of Unesco. The minds of men. The individual mind and the mass mind. How does Unesco expect to remove the suspicion and mistrust between the peoples of the world that have so often broken into war, and replace them with mutual knowledge and understanding?

Consider the advent of an individual student from, let us say, Bolivia or Iran, to a college in the United States. He sleeps in the dormitory and eats in the commons with the native students—neither of those institutions exists in his own country. He discusses problems with them in the classroom, he competes with them in the gymnasium and on the playing fields, he joins a glee club, dramatic or debating society, or any of a half-dozen other extra-curricular activities, he visits neighboring cities without having to report to the police, he attends political rallies, he is invited to typical American homes, he experiences democracy in action. He probably came with a great respect and admiration for the industrial and technological superiority of the United States but with a belief that its civilization and culture are materialistic and mechanical. His experience here transforms his mind. He learns that America has a soul, that it does not consist only of factories and assembly lines but has also magnificent museums of art, great symphony orchestras, beautiful cathedrals and churches. Like the wandering student of the Middle Ages who listened to Abelard at Paris, to a famous jurist at Bologna, and to a learned philosopher at Prague, and returned home to become a lighthouse of toleration in the surrounding sea of prejudice, our foreign student returns to his own country zealous to spread among his neighbors his respect and admiration for the United States. In 1938, there were ten thousand foreign students in our colleges and universities. Today there are seventeen thousand, next year there will unquestionably be twenty-five thousand, and if the plans of Unesco for the exchange of persons are realized, there will be in a few years as many as fifty thousand.

But Unesco does not contemplate a one-way-street program. Let us follow an American student to, say, Italy. He repeatedly walks the streets of the Forum, passes under the arches of Trajan and Constantine, visits the Baths of Caracalla, the Coliseum, and the catacombs of the early Christians. He is amazed at the quantity of beautiful objects, unsurpassed by any of our own day, which have been found in the ruins of Pompeii and Herculaneum, and placed in the

Museum of Naples. He is surrounded by the monuments of a civilization as brilliant as his own but which, because of a prolonged history of wars, finally had neither men nor money enough to withstand the barbarians from without. Our student will visit the scenes of the life work of Virgil, Petrarch, Dante, and Mazzini, and return home impressed by the continuity of history and the place of tradition in life—an element which plays so small a part in our own affairs. It is seldom that such a student does not return with an abiding affection for the foreign land in which he studied.

One might say that unquestionably the mind of the individual will be inspired by such experiences as those just described but that only few individuals can have such a remarkable opportunity. It is the mass mind upon which the agents of hate and prejudice and violence work. Moreover, the written word in journal, magazine, and book which Unesco will cause to be widely distributed among the nations will avail but in part because alas, more than half mankind has never learned to read! But science, one of the bases upon which Unesco is built, has provided it with two instruments of marvelous potency with which to influence the mass mind, namely, the cinema and the radio, to both of which Unesco is asked in its Charter to give special attention. Ages before the alphabet was invented, primitive man expressed his ideas and feelings in wall pictures and it is pictures that his illiterate descendants read today. Not only to the illiterate but to all who can see, the cinema will portray the amazing products of man's mind at its best: the great dams which provide him with the electricity that will light and heat his house and irrigate sandy wastes upon which thousands will found homes; the great industrial plants that supply him with goods that add so much to the comfort of life and raise his standard of living; it will show him the wonders and the sublimity of nature in its many forms, and the beautiful paintings, sculpture, and *objets d'art* housed in the great museums of the world. Similarly, the radio will enable the worker on the assembly line to forget the dullness of life in a mass-production civilization in listening at night and on Sunday to the music of the dance and the concert hall, and, perhaps, even to the symphonies of Beethoven or the operas of Wagner. None of this wealth for man's improvement will be forthcoming unless those in control of cinema and radio feel the responsibility of their trusteeship, that those great instruments exist for human welfare to inspire man's imagination and refine his feelings. It is the intention of Unesco to educate the public opinion of the world to that end.

THERE are backward areas and dark regions that know little or nothing of the new movements being organized to increase man's knowledge of the real meaning of his own humanity. There are immense areas whose people have lived for generations under a regime of colonialism but whose imperialistic masters, like those of imperial Rome, have no longer men and resources enough to maintain the colonial status. China was relieved of it a few years since,

India is about to be, Indonesia and other areas hope to be. They have learned of the Atlantic Charter, of self-determination, of the principle of the equality of opportunity for all men emphasized in the Charter. They know that Unesco is not a political organization and cannot give direct help to solve their political problems. But they also know that Unesco is primarily an educational organization, directed by its Charter to give assistance to those regions which call upon it for help in its field of reference. And Unesco will respond to help them to build schools, it will send them teachers to enable them to become better farmers and understand the use of tools to make better homes, to teach them the principles of hygiene so that they can better care for their children—in short, to improve their standard of living. All that will be only a beginning at equalizing education among all peoples, for there is no ceiling on education.

Can there be anything more unfair, more despicable than deliberately to keep an individual or a group in ignorance? Yet that is what has happened with national minorities throughout history. The Charter has put upon Unesco, for that reason, the duty "to develop and to increase the means of communication between peoples" so that the peace we envisage may be "founded upon the intellectual and moral solidarity of mankind." No dictator can permanently keep his people in darkness about the movements outside his country making for the freedom and uplifting of all mankind. Hitler and his satellites established a cordon about each country they conquered, to keep out the inspiring news of the help being sent from the democracies for their liberation, but the news filtered through and stimulated the uprising of the conquered peoples which helped so much to bring about the downfall of the Nazis in those countries. And so today, no intellectual blockade, no iron curtain, no censorship will suffice to maintain one nation or group of nations in a state of intellectual isolation—knowledge, like freedom, has a way of overcoming obstacles and seeping through barriers.

NATIONALISM was not without influence at the organization of Unesco. Article I, Section 3, provides: ". . . the Organization is prohibited from intervening in matters which are essentially within their [member states'] domestic jurisdiction." Were the teachings of the Nazis in the German schools, propagating hatred against neighboring countries, "essentially domestic"? The International Commission of Intellectual Co-operation of the League of Nations took no cognizance of them. And so fearful of interference from without in their national culture were representatives of some countries that when the London conference was called in 1945 for the organization of Unesco, despite the experience of Germany under Hitler, no provision was made in the Unesco Charter to halt a repetition of such propaganda in any country. Nevertheless, if there exists a *Zeitgeist* today, it is one emphasizing the unity of man. In the discussions at London, no suggestion received heartier approval than the one to make a survey of textbooks in his-

tory, geography, and civics, with the purpose of purging them of unfriendly references to other peoples. We want unity in international relations; we want diversity in cultural relations. Unesco realizes that every people has its own culture, its own literature, art, and music, resulting from geographical influences and with deep historical roots. It would be a disservice to humanity to attempt to standardize them.

Americans ought to be the strongest supporters of Unesco, for it resulted from their thinking more than from that of any other people. The unusual influence exerted by the American delegation at the London conference is explained not only by the greater degree of preparation they made but also by the emphasis given to education throughout the history of their nation. I have repeatedly asserted that the history of the United States is the story of the widening of the domain of freedom, of interpreting the phrase, "the general welfare," to include more and more individuals and groups in the enjoyment of increased opportunity for material and spiritual advancement. This has unquestionably been an inspiration to peoples in other lands. Hence, whatever the problems that may arise and however difficult their solution, the United States must participate actively in postwar, international educational relationships. The war has ended with most of the combatants in a state of exhaustion, and many in chaos. Reconstruction cannot, this time, be confined to material things, as it was at the close of the first World War. Reconstruction of attitudes toward all human problems—political, economic, social, and international—will be necessary if this holocaust is not to occur again. The people who have had the most experience in the change of attitudes resulting from educational reconstruction are the American people. For their own welfare, as well as for the good of all mankind, Americans must participate as leaders, not to impose our view of life upon any people but to inspire in all peoples an understanding of our common destiny, to place our experience at their service in the hope that they, like us, will want to help build the better world in which liberty and security and justice shall prevail.

What is the inspiration of Unesco, of this adventure in the evolution of humanity? It was stated nearly a century ago by Tennyson:

> Ring out false pride in place and blood,
> The civic slander and the spite;
> Ring in the love of truth and right,
> Ring in the common love of good.
>
> Ring out old shapes of foul disease;
> Ring out the narrowing lust of gold;
> Ring out the thousand wars of old,
> Ring in the thousand years of peace.
>
> Ring in the valiant man and free,
> The larger heart, the kindlier hand;
> Ring out the darkness of the land.
> Ring in the Christ that is to be.

Will the ideals of Unesco be realized? Not all, immediately, by any means, but many, gradually, and, pray God, all, eventually.

A Social-Science Comprehensive

By WILLIAM G. CARLETON

A Report of Twelve Years' Use of This Course at the University of Florida

FOR twelve years now, the University of Florida has had a genuine social-science orientation course conceived in the philosophy of general education.[1] It is required of all entering students, extends over the entire first year, meets four times a week, and gives eight hours of credit for the year. Perhaps no institution of higher learning has had as much experience with such a course, with the exception of the University of Chicago, and our experience at Florida has been more significant for the ordinary college or university because our students are average students while those of the University of Chicago represent a selected group.

There are over two thousand students now enrolled in our course, more than 60 sections are in operation, and about 25 instructors, some full time and others sharing time with upper-division courses, are engaged in teaching it. Scarcely a day passes that we do not receive inquiries about our course, requests for our syllabus and our tests, and offers to publish our syllabus. Thus far, we have resisted all offers of publication, for even at this late date we do not feel our task completed. Some areas of our syllabus are, perhaps, in almost definitive form, but in other areas we are still experimenting, questioning, altering, pruning, and expanding. As a result of our experiences of more than a decade, we have come to some rather definite conclusions about the nature of a general social-science course and what areas should and should not be emphasized.

Our course is composed of subject-matter drawn from history, political science, economics, and sociology. These subjects are never studied *per se*, but material from all these areas is drawn on and combined in such a way as to analyze the significant economic, social, and political trends in the world, particularly in the United States, today.

The course differs from the conventional introductory course in history, for it demands of history a greater degree of relevance to the significant trends of the present. Conventional historians would feel compelled, for the sake of historical continuity and completeness, to include much that it regards as remote and relatively unimportant. It differs from the conventional introductory course in economics, since our emphasis is on institutional, rather than on theoretical or classical, eco-

[1] *See* Walter J. Matherly and Winston W. Little, "A New Venture: The First Year's Achievements of Florida's New General College," *and* "Another Installment," JOURNAL OF HIGHER EDUCATION, VII (December, 1936), pp. 487–88, and IX (December, 1938), pp. 495–501. These earlier articles will introduce the program to the reader.

nomics. It differs from the conventional course in political science, because our instructors emphasize functional politics rather than the mere machinery and structure of government. Our course differs from the conventional introductory course in sociology in that it contains much less social theory and gives much less attention to such specific questions as divorce, crime, ameliorative institutions, and so forth, on the ground that such questions are marginal and peripheral, rather than central. In setting up criteria for an eight-hour comprehensive course in the social sciences, however, we naturally do not claim to give the student all the values he would get if he were to take additional work in history or political science or economics or sociology.

The University of Florida course differs somewhat from other comprehensive courses now being developed in other colleges and universities. In many institutions the comprehensive course consists of a broad survey of the history of civilization. We have some of the same objections to such a course that we have to the conventional introductory course in history. We believe that a survey of the history of civilization goes too far afield and contains too much that is relatively remote from the interests of the present day.

In some other institutions, the comprehensive course consists of a study of specific social and economic problems—the race problem, crime, marriage, divorce, labor, taxation, public finance, propaganda, international relations, and so forth. We object to a "problem" course on the grounds that it does not differentiate sufficiently between marginal problems and central problems, gives too much emphasis to the current by failing to provide enough historical background, runs the danger of giving the impression that society is static and its problems isolated, does not sufficiently reveal the dynamic, fluid, interdependent nature of society. In our opinion, a course which gives as much attention to "propaganda" as it does to the basic economic and social forces behind the New Deal or Socialism or Communism or Fascism is guilty of a grotesque distortion of values. Moreover, whether consciously or unconsciously, a problem course is almost invariably nationalistic in outlook. Most of the problems treated are American problems, and they are treated almost exclusively from the American point of view. Incredible as it may seem, some of the problem courses of today do not even so much as make mention of Fascism or Socialism or Communism. In fact, an examination of the indexes of some of the textbooks used in problem courses is most revealing. The parochial nature of these courses is not cured by tacking on a few chapters on foreign relations. These are almost invariably discussed with American preconceptions, sentiments, and biases. We Americans must learn to co-operate with the world as it is and not as we would wish it to be, and courses which treat foreign relations solely from the American point of view will not help us to make this adjustment.

Our course stands somewhere between a history of civilization course and a problem course. It is more specific, more concrete, more contemporary than a general survey of the history of civilization. On the

other hand, it is broader than a mere problem course and makes much more use of historical material for purposes of background, causation, and integration. To repeat, our course is a study of the significant and central trends of the twentieth century, and an analysis of their nature, where they come from, where they seem to be going, how they are interconnected.

WE ARE often asked: "Upon what basis do you determine what trends are important enough to be designated as the important trends of this century? What test do you use in selecting and discarding material?" Our test is a pragmatic one. It will surprise many academicians. It is this: We include and emphasize those materials which in our opinion would enable the student to classify, evaluate, and understand what Walter Lippman, Dorothy Thompson, Samuel Grafton, and other columnists and publicists are talking about. If the time ever comes when Walter Lippmann and Dorothy Thompson devote most of their attention to such problems as crime, juvenile delinquency, and divorce, then we shall do so. But so long as our top-flight publicists emphasize business cycles, depressions, growing class conflict, the drive toward statism, war and peace, international organization—in short, so long as they emphasize the revolutionary forces of this mid-twentieth century, the struggle of classes and nations for position and power—then we shall do so. We feel that their sense of what is significant and important is essentially correct. For instance, we believe the depression of the thirties and the recent war have had a greater impact on the family than have all the combined problems usually studied as "family problems."

The significant trends and questions of our century upon which the University of Florida course concentrates are:

1. Increasing material comforts and higher standards of living brought about in the Machine Age, and also, paradoxically enough, the increasing insecurity felt by all classes in this Machine Age.
2. The various answers to this problem of insecurity given by important schools of thought today—Conservative Capitalism, New Dealism, Socialism, Communism, Fascism.
3. Why government has steadily increased its functions and become more centralized during the past fifty years.
4. What have been, and what are, the results of this increasing governmental centralization on civil liberties, representative government, democracy?
5. To what extent have the two great wars and the extreme tensions in international relations characteristic of our century been produced by the feeling of insecurity at home and the failure to solve the problems created by the Machine Age?

These trends and questions are treated again and again and approached in various ways and from different points of view. How we actually make our approach may be seen from the following outline which includes most of the topics and units studied in the course.

1. The nature of culture, how culture changes, and theories of cultural change
2. How modern capitalism arose in Western Europe from feudal and guild beginnings
3. The rise of nationalism in Western Europe

4. The development of representative institutions in Britain and Western Europe. How representative institutions were transferred to America. The development of representative institutions in the United States
5. The industrial revolution in Great Britain
6. The spread of the industrial revolution outside Great Britain. The development of the industrial revolution in France, Germany, the United States, Japan, the Soviet Union
7. Population trends and urbanization since the industrial revolution
8. The factory system, specialization, large-scale and mass production, modern industrial capacity to produce
9. The business revolution that came out of the industrial revolution: the corporation and business consolidation
10. Free enterprise and monopoly
11. Concentration of ownership and changing methods of control; methods of minority control in business
12. The business revolution and agriculture
13. The business revolution and the consumer
14. The business cycle
15. The distribution of wealth and income
16. The business revolution and changing classes: the decline of the old middle class, the rise of the new middle class, the growth of labor and labor organizations
17. Alternative solutions of the problem of an industrial economic order: a positive program of *laissez faire*, controlled capitalism, the democratic service state, Socialism, Communism, Fascism.
18. The rise of political democracy
19. How democracy functions through political parties
20. The trend toward centralization in government
21. Government and industry
22. Government and financial agencies
23. Government and labor.
24. Government and agriculture
25. Government and social security
26. The trend toward integration in government: the problems of modern administration
27. The trend toward executive aggression
28. Civil liberties
29. The crisis in democracy
30. Modern nationalism
31. Imperialism and national conflict
32. The European balance of power and the world balance of power; the United States and the balance of power
33. Socialist and Communist revolutions in Europe; Fascist counterrevolutions; the Second World War
34. The revolt against imperialism in Asia
35. Postwar political trends in Europe
36. Problems of reconversion and economic reconstruction
37. World organization to keep the peace
38. The future in international relations—world organization or the balance of power?

MANY think that this is a rather formidable order for Freshmen. We admit this. It is formidable. When we began this course and attempted to fit it within the framework of a program of general education, there were those who predicted that we would err on the side of superficiality. Old-fashioned educators prophesied we would "water down" education and give students vague generalizations, catchwords, canned conclusions, catechetical answers, pap. This criticism is heard no more. Mental wrestling with the baffling problems of the twentieth century, presented against the background of rich factual material, can be made as intellectually respectable as the old and traditional disciplines

and manyfold more significant, relevant, useful. Indeed, many of our students now find that courses in the upper division are thin and anticlimactic by way of comparison. Mere mark seekers, those who expect to "get by" as the result of getting "lessons" from day to day and making an assiduous display of "the right attitude," are frightened by a course like this. Not only is the subject-matter intrinsically fertile, but the teacher cannot be "apple-polished" into giving a good mark, because marks are set on the basis of achievement made in comprehensive examinations centrally administered. This has proved a Waterloo for many of our promising athletes; and many public-school teachers, attending the University of Florida Summer Session and accustomed to a system where "daily lessons" and "attitude" count, show a tendency to shy away from our course.

As it has turned out, then, if we have erred at all, we have erred in the direction of making the course too difficult rather than too easy. Few believe, however, that it is really too difficult. Real achievement is high. Marks are based upon scores and not upon percentiles. The rate of failure has steadily declined. In the beginning, failures were sometimes as high as 15 or 20 per cent. Now failures rarely exceed 5 per cent and, with the influx of the serious-minded and mature veteran-student, they have declined to 2 per cent and, in a single instance, to 1 per cent. Veterans, more mature and experienced in the ways of the real world, naturally take to this course, as do those who genuinely want to understand this complicated world in which we live. There is no doubt of the impact of this course on students' thinking. Students gather in knots after the lectures to debate and argue. They spontaneously write themes in other courses about the questions raised in this one. Instructors in the upper division report that students are no longer satisfied with mere facts; they demand concepts, ideas, generalizations, points of view. No doubt, some students go too far in this direction and demand patterns of thought where none can honestly be drawn from the facts. During the war, many of our former students, in the armed services in all parts of the world, wrote back to tell us how much the course had aided them in clarifying their understanding of the world situation and making "sense" of the war. We have many such letters.

THE heart of the course is to be found in the syllabus prepared by the staff, but assigned and recommended readings are made in a variety of books representing all points of view. The open shelves in the library devoted to our readings contain copies of almost every college textbook in the social sciences. But we do not stress textbooks. In addition to textbooks, we have numerous copies of such books as *The Economic Basis of Politics*, by Beard; *The Modern Corporation and Private Property*, by Berle and Means; *The End of Economic Man*, by Drucker; *The Managerial Revolution*, by Burnham; *The Road to Serfdom*, by Hayek; *Reflections on the Revolution of Our Time*, by Laski; *The Good Society*, by Walter Lippmann; and many others. This list is merely representative; we have multiple copies of literally scores

of such books. These, and not textbooks, are the sort of books we encourage our students to read.

At the present time, each student enrolled in the course goes to his discussion class three days a week and to a large lecture section once a week. Lecture sections contain from three hundred to five hundred students. We have done considerable experimenting with the lecture-discussion method. In the beginning, we had one lecture for every discussion period. This resulted in too many detailed and factual lectures and in insufficient time for discussion. Then, for a time, we abolished the lectures entirely and had only discussion classes. This, too, resulted in certain losses. We missed the sweeping vistas afforded by good interpretative lectures. Since the student did not come into contact with members of the staff other than his own discussion instructor, he missed the play and clash of personalities, the different points of view typified by the various lecturers. The present system of one lecture and three discussion periods seems best. The lectures always cover enough units to assure their being broad and interpretative. Students again see in action almost all the best-known and most dynamic members of the staff. Instructors of the various discussion classes are kept on their mettle; they feel themselves in intellectual competition with the lecturers.

Possibly one word of caution is in order here: there is nothing so damaging to morale as a poor lecture. Members of the staff who do not lecture effectively should not be asked to lecture at all, even though some susceptibilities are wounded thereby. The vitality of the course should never be allowed to suffer merely to bolster the supposed prestige of staff members.

Examinations are given each month and at the end of each semester. These examinations are objective, prepared by the staff, and centrally administered by the University Board of Examiners. One of our greatest difficulties has been in finding staff members who can write, and who like to write, pertinent objective questions. We have such instructors, but they are rare. The tendency of the average instructor is to write questions which are either too narrow and factual or too broad and obvious. Our aim in any test is to use a large number of questions which are broadly interpretative but which call for answers that require a fund of information.

Each instructor is free to have as many essay tests and as much other written work in his discussion sections as he may desire. However, no satisfactory way has been found of computing this written work in the final mark, and, up to this time, probably not enough written work is required of the student. To encourage all the written work desirable would require a much larger staff and much smaller classes than most institutions today can afford.

CERTAIN difficulties and potential dangers inhere in any comprehensive course in the social sciences centrally directed and administered. Let us examine some of these.

One is the difficulty of securing competent instructors. Instructors must be thoroughly trained in at least one of the social sciences and

must have a broad interest in, and some familiarity with, all the social sciences. They must be broadly gauged and equally at home in factual and interpretative material. They should have the thoroughness often associated with pedants, but they must not be pedants. They should have the facility often associated with superficiality, but they must not be superficial. They must, above all, be good teachers and genuinely interested in teaching. In our experience, good teachers have come from each of the social sciences, but we have discovered that sensitivity to social and political movements, the feel for trends, is to be found a little oftener, perhaps, in the historian than in men drawn from the other social sciences. We have experienced our greatest difficulty in finding good institutional economists; too many economists want to be classicists and theoreticians. Moreover, we have discovered that men who like to philosophize about education and to write about teaching goals, instructional objectives, and classroom techniques too often do not know how to apply their theories to actual teaching conditions. The proof of the pudding is in the eating; effective execution is in the doing; one ounce of practical teaching is worth a pound of theory. Our best teachers, without a single exception, have been those primarily interested in content and subject-matter and only secondarily interested in pedagogical devices. Also, general education should be wary of the "junior college" type of teacher. A man who does not know enough to teach in the upper division has no business in the lower division. Teaching comprehensive courses requires more information, more breadth, more insight, and more real wisdom than is generally required in the average upper-division course.

A potential danger involved in comprehensive social-science courses such as ours at the University of Florida is that the course may emphasize concepts and trends too much, that it may become too pat and even doctrinaire. Indoctrination must be avoided like the very plague, and it can be, by insisting that the course be rich in factual material, by appointing to the teaching staff men of various and even conflicting points of view, and by seeing that readings are widely representative of different schools of thought.

The greatest difficulty in teaching a comprehensive course in the social sciences consists in the subject-matter itself. We cannot escape the very nature of our own materials. We cannot run away from the staggering problems of our century. In the social sciences we are dealing with vested interests and human emotions. We are dealing with economics, in which men fight over wealth. We are dealing with politics, in which men fight over power. Teaching the social sciences will always be an adventurous and a dangerous business, but it is especially so in this revolutionary century in which we live. After all, we social scientists did not produce the troubled world of this century; we are only trying to account for it. In spite of the difficulties and the dangers, we specialists have a positive duty to help discover the basic trends of our time, to analyze them, to explain them.

The dangers inherent in raising the

[*Continued on page 170*]

A General-College Curriculum

By L. P. CHAMBERS

Proposals for a Series of Background Courses Involving Many Areas, Similar to the Practice at Washington University

THE curriculum of the standard American College recognizes the need for breadth as well as for specialization. Thus, at the typical university, every candidate for the B.A. degree is required to take, in addition to electives, the following prescribed courses: two years of English, two years of a foreign language, one year each of two natural sciences, one year each of two social sciences, and, at Washington University, one year of "Classical Culture." Breadth of interest is not, however, all that the prescribed courses should supply. They should also give the student a well-rounded picture of the world of which he is a member. It is not enough, for example, that the expert in physics should have had courses in, let us say, economics, psychology, and history of art; or that the student of literature should have had some sociology and physics and biology. Contacts with subjects which do not bear directly on the student's specialty may supply him with interesting hobbies for his leisure moments; and they should give him some appreciation of the labors of others, since the specialist who knows nothing but his own field is apt to overestimate the value of his own specialty and to underestimate the labor of those whose interests he does not share. Variety of interests and breadth of sympathies, however, are not enough. The student needs not merely a few contacts with subjects outside his "area of concentration," but a well-rounded picture of his physical and social environment—especially the latter, for one cannot understand the events of his day or evaluate the policies of his government unless he knows the historical, social, economic, and psychological backgrounds of political events.

A second defect of the standard curriculum follows from the first, since, in the standard curriculum, the first-year courses in the natural and the social sciences are expected to serve two incompatible needs. Some students take these first-year courses only in fulfillment of the one-year requirement; and for them the courses should consist of general surveys of the various topics being studied. For the student, however, who is taking a first-year course in any subject with a view to advanced work, the course should be a preparatory course, that is, it should train the student in the techniques and basic principles of the subject, leaving it to subsequent courses to round out his understanding of the whole field. This is the usual character of standard first-year

courses; in other words, they are courses preparatory to further work in the subject, not sufficient in themselves. Thus, since the student takes only two out of several physical and two out of several social sciences, the understanding of his physical and social environment which he gains from the typical prescribed curriculum is disjointed and fragmentary. Even in the areas in which he does take these first courses, the student who goes no further gets a preparatory rather than a well-rounded course; so that in these areas, too, his knowledge is fragmentary. How can these defects be remedied?

Since part of the educational process should consist in giving the student a general understanding of his social and physical environment while another part should consist in training him in his chosen field, the methods of instruction in these two types of courses will necessarily differ.

The general courses should be prescribed, since these by hypothesis give information which every person should have who wishes to take an intelligent part in the social system of which he is a member. The specialized courses, on the other hand, would be elective, that is, each student should choose his own area of concentration. In the elective courses whose purpose it would be to make the students more or less proficient in their chosen fields, an effort would be made to develop each student's capacity to discover and interpret for himself the facts relevant to his own field. He would, therefore, be expected to subject to scrutiny the facts and theories imparted to him by his teachers, and to master for himself the techniques for the investigation of data and for formulating and testing hypotheses. But the primary aim of the general courses should be to impart information. Instruction in the course should, therefore, follow lecture and textbook methods, for no more should be required of the students than that they remember as much as they can of what they are told. The area to be covered in a survey course is too extensive to be treated by the method of individual instruction and by training in the investigation and interpretation of facts which is properly employed in the specialized courses. However, the fact that in a general course the student accepts what he is told is not a concession to authoritarianism in education; it is merely a concession to the limitation of the human intellect, since no one can master all fields of human knowledge.

In the general courses, therefore, the classes may be as large as available classroom accommodation will permit. The registration in the specialized courses, however, should be kept as low as possible, for here the method of instruction would include laboratory work and case study, individual practice in formulating and testing hypotheses, and all the other methods of individual research.

CAN a curriculum be devised that will meet these two defects? The proposal here made is to require, in lieu of the standard one-year courses in two natural and in two social sciences, two series of survey courses, one covering the natural sciences and one the social sciences, each series to extend over two years. How this method would eliminate the defects of the standard curriculum

will be considered later, but first a word in defense of survey courses.

To many teachers, the word *survey* seems to imply a sketchy and superficial treatment of a great variety of disconnected subjects, lacking continuity as well as thoroughness. However, a survey course, if it is a scholarly presentation of the most significant aspects of the subject under discussion, can be brief without being superficial. Moreover, the two surveys, one in the natural and one in the social sciences, could be organized to bring out the interrelatedness of the subjects treated in each series. Since a people's culture is not a mere aggregate of unrelated facts and conflicting interests, it is imperative that the teachers in the various departments of our colleges and universities should show their students the relations between various subjects. To do this would be the purpose of the two series of two-year survey courses suggested here. Viewed in this light, survey courses would not be cheap and easy substitutes for a sound education in the sciences; for the specialized courses in the natural and social sciences are not to be discarded or even abridged. The survey courses are not to be offered as a substitute for the standard courses, but as supplementary to them, serving a purpose for which the standard curriculum makes no provision, unless, perchance, this kind of work is done in the department of philosophy—even if inadequately. The purpose of the survey courses proposed here would be to correlate the various departments of human knowledge. In doing this they would make a significant contribution to culture, one which our colleges can no longer afford to neglect as we enter upon the task of building the postwar world; for a serious defect of pre-war education lies in this very discontinuity and confusion in our national and our international culture. In this, then, lies the value of properly co-ordinated survey courses.

In what way would the defects of the standard curriculum be met by the inauguration of these inclusive survey courses? First, the failure of the standard curriculum to give the student a well-rounded picture of his world is precisely the defect which the broader information given by the two series of survey courses is calculated to remedy. Second, first-year elective courses in the physical and social sciences would no longer attempt to serve two incompatible needs—general information and preparation for specialization. They could be genuine preparatory courses. A third, if incidental, value of the inclusive survey courses would be that they would introduce the student during the first two years of his college course to the full range of college subjects, other than languages, and would thus enable him to choose his own special field more intelligently, since few students come to college with their minds already made up as to what they want.

The administrative problem of the teacher's load will offer little difficulty; since the classes in the survey courses would be large, and since each department would be responsible for only a segment of each course—though an interdepartmental committee should organize the whole course—there should be little if any increase of teaching load in offering survey courses in addition to the regular offering of electives. Also,

the purely informational character of the survey courses would make possible the use of the objective and true-false types of examination and thus secure a great saving in time spent in reading tests and examinations.

THE prescribed courses for the Bachelor's degree at a typical university include 6 units in English composition and rhetoric, an obvious requirement, since an educated person should know how to use his own language, for through it he is to give expression to his own ideas and learn those of others; 12 units in one foreign language, since the wider culture of humanity is a closed book to one who knows only English; 6 units in each of two natural sciences; 6 units in each of two social sciences; 6 units in "General Introduction to English Literature" (a survey course); and, at Washington University, 6 units in classical culture.

Of these, the courses in English composition and rhetoric and in foreign language may be spoken of as "tool" courses, since they supply the student with the means of acquiring and imparting information. The other prescribed courses—natural and social sciences, English literature, and classical culture—may be spoken of as "background" courses, since they supply the student with knowledge shared more or less by the community of which he is a member. With these tools and against this background, the student is to acquire through elective courses the specialized knowledge which will fit him to make his special contribution to the community.

The proposal was made in the preceding pages that a two-year survey course covering the natural sciences and a two-year survey course covering the social sciences be prescribed, in place of four one-year courses, two selected from the natural, and two from the social, sciences. For similar reasons, I would propose that the prescribed survey course in English literature be made a survey course in world literature, for the necessity of increased contacts with the rest of the world, emphasized in Wendell Willkie's book *One World*, and by the urgency with which many are now advocating a world federation, makes some acquaintance with the culture and thought of other peoples as essential to the educated person of today as was a survey of English literature to our fathers.

There would, then, be three series of survey courses: a survey of the natural sciences, a survey of the social sciences, and a survey of literature—English and foreign. What has been said about the method of instruction in the survey courses in the sciences applies also to the survey course in literature.

As for the prescribed courses in English and a foreign language, the method of instruction would have to be that of small classes with individual instruction and training. Granted these courses are prescribed, one cannot learn language merely by listening to a lecture—the method proposed for the prescribed survey courses.

At Washington University, the typical freshman and sophomore curriculums include 6 units each year in each of the following fields: English language and literature, one foreign language, the natural sciences, the social sciences, and, in lieu of one elective, 6 units in classical culture.

There is also a requirement of two units each year in physical education or military science and tactics.

The purpose of this prescribed curriculum is to overcome, as far as it can be done through education, that segregation of minds, that ignorance of subjects and interests outside one's own field, out of which grow the lack of understanding of others and of sympathy with them which gives rise to conflicts between divergent interests—different religions, professions, classes, races, ideologies, and the rest—instead of bringing about that mutual enrichment of the group to which diversity should contribute.

Now, mutual understanding is possible only where there is a background of common knowledge; and under the pressure of the shrinking world, whereby we are thrown into continuous contact with the other peoples of the world, the attainment of a common background is more imperative than ever. As we have seen, however, the study of only two out of several natural sciences and of only two out of several social sciences leaves serious gaps in our knowledge of the physical and the social world in which we are to play our part; and the proposal to substitute inclusive survey courses in the natural and the social sciences seeks to remedy this defect by giving the student an over-all picture of his environment.

A background of common knowledge is not sufficient; we need common ideals as well, and we can achieve these only as the peoples of different classes and nations and religions get to know each other. On the assumption, then, that we meet a people in their literature—and this is what gives value to courses in literature—it would seem desirable to give our students a survey of world literature, and not to confine the prescribed literature course to that of the English-speaking world only. In the light of these considerations, the two-year "general college" curriculum might be changed to read as follows:

	Number of Units	
	First Year	Second Year
(1)	(2)	(3)
English composition and rhetoric	6	.....
English and world literature	.....	6
A foreign language	6	6
Survey of the natural sciences	6	6
Survey of the social sciences	6	6
Electives	6	6

The two series of survey courses would fall into two sections each, to be given in two successive years. The natural sciences fall logically into two groups: the physical—astronomy, geology, physics, and chemistry; and the biological—botany, zoology, anthropology, and physiology and hygiene. The social sciences also fall into two groups: the historical—political history and cultural history, that is, the histories of art, science, philosophy, and religion; and the philosophical or normative—psychology, economics, and economic geography, sociology, politics, and ethics. If these lists sound too ambitious, the reader will remember that in the prescribed survey courses only a general survey is to be attempted, and that in each of these subjects there is also to be offered the full complement of regular elective courses, including the standard first-year courses in each department. Thus, a student majoring in zoology would not substitute the survey course in the biological sciences for the first-year course in zoology.

He would take the standard first-year course in zoology, but he would also have the survey course which would show him the relation of zoology to the other natural sciences.

IF THE preceding argument is sound, the two-year general-college curriculum should be the minimum requirement for entrance into any of the degree-conferring divisions of a university. Some—and in due time all—might prescribe more than this minimum but none should prescribe less.

If the two-year general-college curriculum does offer a desirable common background for all students at a university, in whatever division they may be planning to continue their education, there is no reason to restrict it to a single university. The same reasons that would make it seem desirable for the students of one university to carry on their specialized education on a common background of general knowledge would dictate the adoption of the same basic course in all the schools of higher education in our land and, ultimately, in all lands; for our graduates will not live out their lives in close association with fellow graduates of their Alma Mater but will meet and work with graduates from other American colleges and, increasingly, from other lands. Obviously, if this prescribed curriculum—or a modified version of it—should be adopted by colleges abroad, non-English speaking peoples would substitute their own national language and literature for English. Apart from this, the proposed two-year general-college curriculum would be as valid in Chile, China, and the U.S.S.R. as in America.

This is not to propose that an identical culture and common beliefs should be imposed on our own country or on all the world by means of an identical educational policy. The great variety of specialized courses which is offered by the departments and schools of American colleges and universities, to say nothing of the greater variety of courses and cultures offered by the colleges and universities of other lands—all of this diversity of approach and wealth of interest which are the pride of democratic education—should be preserved and encouraged. But lest this diversity of educational offerings and educational policy should turn out provincialized specialists only, each brilliant in his own field but out of touch with and unsympathetic to persons in other fields and with different national backgrounds (this is generally supposed to have been the defect of the highly vaunted German educational system and the reason why the German universities succumbed so helplessly to Nazism), it would seem highly desirable, indeed urgently necessary, to develop for colleges and universities everywhere, a common policy with regard to what might be called the "Common Background of World Culture"—a background to be supplied by the basic college courses prescribed for all candidates for any college degree whatsoever, in every college and in every land.

How Educate Our Engineers?

By SAUL BELILOVE

A Proposal That Some Work in the Humanities Be Included

ABOUT the only introduction a layman can use when discussing education with educators is that he has some special information to impart, and he must also specify that this information is not ordinarily acquired in the course of a teacher's everyday experience. Through that loophole this article is squeezed.

Recent squabbles in modern education have concerned engineering less than general, or "liberal," education. Wholesome and stimulating as differences of opinion may be, there is no denying that the student who is the subject of discussion is in process of escaping from the scene of the conflict among teachers of general education. While the factions rage about what kind of liberal education students should obtain, the students themselves are inexorably moving into the calm atmosphere of the engineering and basic physical sciences. Moreover, as I hope to show, the matter is not one which concerns engineers alone; it is of import for the entire educational profession.

Whether or not this "escape" is desirable, for the young student or for the teachers or for the general welfare, is one problem. There are a great many reasons why the trend is a deplorable one, although its disadvantages have compensating benefits; but that question is beyond the scope of this discussion. Rather, let us consider the extent and causes of this steady movement into the field of engineering. Then, after due deliberation, let us ask the educators, a trifle indignantly, what they are going to do about engineering education, for, to my knowledge, our colleges and universities have not yet faced this vital problem.

If we peered into the records, there is no doubt that we should find that the percentage of technical students in universities and colleges is steadily increasing. This has been in the face of a liberal-arts tradition which has kept university curriculums under its thumb; in fact, by means of college-entrance qualifications, the liberal-arts tradition has exerted a powerful influence on high-school curriculums. We all recall the struggle as a result of which Greek and Latin were tearfully wrenched from college-entrance requirements. Indeed, since the early days of this century, a special Society for the Promotion of Engineering Education has struggled valiantly to turn educators technical-minded. Their success is shown in the present trend—a veritable sweep toward technical education.

This trend has been intensified as a result of the war. At least three major influences can be detected. One is the Army and Navy educational programs which were planted in almost every college in the coun-

try, in which technical training for war—engineering, meteorology, navigation—predominated. Without question, the training servicemen received will lead to continued technical study in postwar years. Another factor has been the necessary emphasis during the war on the equipment of war—the guns, the machines, the planes. Millions of civilian warworkers and millions of men in the Army and Navy have become at least superficially acquainted with this equipment, and will wish to exploit the acquaintanceship. This influence, too, will lead to technical education. Finally, consider the "co-operation" that high-school administrators gave to the Army and Navy—aeronautical courses, additional physics and chemistry, physical education. The heavy touch of this preliminary work will undoubtedly steer many boys into technical fields.

The truth of the matter is that our country, long famed in the rest of the world as a "nation of mechanics," a tribute to our technical progress and our wealth, is moving to a slightly higher plane. We are now going "technician." Now that we have seen what the trend is, let us attempt to find its significance.

RECENTLY, liberal education has been given a severe overhaul. Much of it has been in words only, but the verbal assaults of the Hutchins', the Deweys, the Stringfellow Barrs, and other educators have not been without effect. Evidently, there have been few critical comments about engineering education, however, for the engineering curriculum has gone its accustomed way—serene and aloof. With the advances of the sciences, it has given way here, added a bit there, cutting slightly, and consolidating, as pressure for new subject-matter increased. With the development of this new material—the radio, television, communications, and other electronic fields; the metallurgical sciences; the aeronautical developments; the Diesel engine—courses have been developed and sandwiched into the schedule. These changes, however, have been minor: mild changes in intensity, slight shifts in emphasis, but no revision in principles, no planning and execution of any function other than the straightforward training of laboratory testing and slide-rule gymnastics. Take a long, hard look at the curriculums for engineering students of thirty years ago; compare them with the modern. The difference, from the viewpoint of this discussion, is in detail only.

The other variable factor in a man's formal education is the attitude of his instructors; and, though I do not speak from personal knowledge, I am convinced that the horizons of the instructors of thirty years ago could not possibly have been narrower than those of modern engineering professors. So far as the technical student's training is concerned, the general approach has not changed with the times, probably because, for the designed purpose, it has done a good job. The engineer at his work has "paid off" for his education.

In modern industry, the responsibility of the engineer begins with the conception of the product, and does not end until it is out the door. This responsibility and its associated control for the entire production process, although softened by subdivision and job specialization, is huge in conception. It is handled in the same way we have learned to handle other massive, ramified problems. Like the

members of the medical profession, engineers have broken down their big responsibilities into many little ones. The success of the work is shown in the result: for each year in the past twenty-five, the estimate has been made that just about 2-per cent additional productive efficiency has been added to our economy. This gives us more products and new methods to ease our lives, more time to spend at our leisure. Surely, for this function and with this result, engineering education cannot be considered a failure.

Indeed, the American engineer is idealized for his practical, straightforward approach—his resourcefulness and adaptability. Our educators have succeeded to this extent. Into the four-year collegiate program, they have crammed more work than there is in any other program. There is little doubt that engineering students, to obtain even passing marks, undergo the most rigorous and intensive curriculum of modern undergraduate education. This intensive study has aimed at one goal, and one goal only: Give the man the best possible idea of Nature's workings, and how to anticipate their occurrence and magnitude; then show him what are the present tools of the trade. A pat on the back, and the student, now a full-fledged graduate engineer, goes into industry to apply those principles to the specific requirements of his employer.

CURRENT interest in the modern engineer centers on his development. This man is getting to be a very important individual. Not that he is a mystery. Actually, he is an exceedingly simple, extremely sane human being (sometimes too sane), with a passion for doing things the easiest and most convenient way he can find. This means knowing the facts of his job and developing a respect for facts that is probably unequaled in any other field. For an ignored significant fact, like a boomerang, usually comes back to smack the engineer square in the face; Dame Nature is a jealous, unrelenting shrew.

This quality, among others, industry as a whole finds of tremendous value; graduate engineers are now the backbone of almost all industrial firms. Management is coming more and more to rely upon engineering training as the *sine qua non* of promotion to its ranks.

This in itself is no new development. Businessmen throughout history have needed the qualities of the engineering-trained mind to be successful. The interesting aspect of the present situation lies in two new circumstances. The first is the reliance we will place on mechanical equipment to do our work for us in the future. This is no new trend, of course, but we may be a trifle unprepared for the extent to which we shall be affected by the acceleration of this development. The noted Gerald Wendt, who has devoted much of his life to studying the impact of science on human living, claims that there will be more changes in our way of life in the next ten years than there have been in the last fifty! This appears unbelievable when we recall what the radio, the automobile, the airplane, electricity, and medicine have done for us during the last half-century. And it is not the atomic bomb that is at the root of this prediction; the promise of controlled atomic energy is not the reason—it is merely spectacular, convincing proof

of how far we have come along the road to control of our material world, a convenient symbol of what may be known in the future as the Second Industrial Revolution.

If it is to be a scientific world, with new freedom for recreation, with mechanical equipment freeing us from physical labor, the engineering men who understand these matters will be leaned upon more and more heavily. The weight of their advice will fall upon ears that are more and more receptive. In a world which is shifting from a manual to a mechanical basis, their knowledge could be critical, as it has been in the past—for it is only the facility by which we learned to control the things about us that made possible the development of our modern social civilization.

Modern engineering is not slow in its impact. Compared to the past, the present time gap between technical development and the resulting social change occurs in about the same ratio as the travel time of our zooming aircraft compared to that of cantering horse and buggy. With this acceleration, we shall find that the men who lay the engineering bases of these social changes may have thrust into their generally unwilling hands the responsibility and power of fostering the social changes. Because the technical basis of our civilization is, of necessity, growing so profound, and the ramifications so complex, the task of interpreting the social significance of new engineering developments may be turned over to the engineer who develops them.

The second new factor that gives significance to the rise of engineers in industrial management is the striking change which has taken place in our business corporations during the last two decades. Control over the corporation, legally in the hands of the stockholders, is not there at all; for the stockholders' irresponsibility in the affairs of the corporation has allowed self-perpetuating control to remain in the hands of the management. Government has modified this control somewhat, but not fundamentally.

This transition in corporation control has been very adequately treated by Berle and Means and by Peter Drucker, all of whom foresee in the corporation the nucleus of future social organization. For example, Berle and Means conclude: The future may see the economic organism, now typified by the corporation, not only on an equal plane with the state, but possibly even superseding it as the dominant form of social organization.[1]

Drucker foresees, as the "only way to Freedom," a balance between the government's political control, on the one hand, and the economic and social control of the future corporation, on the other hand. So far as Drucker is concerned, the corporation must develop as an independent, self-governing community. Economic control, the only legitimate basis of social control, in Drucker's opinion, is the means of grouping men together in a balanced, harmonious society, to remove the danger of absolutism by the state. Our economic units, the corporations, are, co-operative-like, to be social units as well.[2]

Moreover, if we suppose that the state will assume industrial responsibility, as it has in many industries in Great Britain, it will most likely do

[1]Berle, Adolph, and Means, Gardiner C. *The Modern Corporation and Private Property*. New York: Macmillan Company, 1922. p. 357.

[2]Drucker, Peter F. *The Future of Industrial*

so through the device of the public corporation. We, in this country, have the Tennessee Valley Authority as our outstanding example of this. David Lilienthal, its director, in pointing out that the responsible, independently operated and administered government corporation is the twin of the private corporation, gives the same requirement for social regrouping which Drucker has indicated.[3]

I emphasize these books, not because I agree with their conclusions—although I do—but because they shed light on the rôle which the corporate manager must be expected to play in the future. This new function of corporations requires in our corporate management, new abilities, new ways of thinking, new basic democratic impulses, new understanding and evaluation of the historical past, and a deep-rooted tolerance and appreciation of the ways of democracy and its institutions. These developments, too, will throw into sharp relief the omissions we have made in the past in the training of our corporate management. For the test will come in the next few years. And who can say we have the men who are trained for it?

THE strange paradox about engineers as a group is that their ability to think straight is restricted: Here we have men fully able to cope with the rigorous thinking required by their profession, yet simply unable to be objective regarding fields where other values are concerned. Shut in at their work, away from the important problems of human living, engineers are unable to focus their analytical abilities upon the unfamiliar subject-matter of human relationships.

This paradox is not simple of explanation. It is the result, certainly, of more than mere ignorance concerning the facts of an unfamiliar situation; it exists, rather, because the engineer looks at the situation from an opposite pole. Two facts contribute to the solving of the puzzle. First, the engineer is a cautious man. It is his duty to incorporate the maximum amount of safety factor in his work; and when estimation is required, he always overdesigns. Also, since nature's physical laws are essentially constant, he knows that a duplicate of an item which has already worked for him will work again. It is, therefore, his tendency to stick to the old until he is sure of the new. In dealing with a repetitive physical relationship, that is his answer. Second, the other explanation is the fact that psychologically the engineer is on an ever expanding search for certainty. The habits of his work and his absolute reliance on fixed relationships make him certainty conscious. A single successful physical test allows him to draw a general conclusion—a conclusion which is independent of time, of social growths, of economic changes, of wars—indeed, of every human development. So far as the engineer is concerned, he can fix it in his mind permanently and lean on it with absolute faith; to him, it is a harsh, unalterable certainty.

This search for certainty leads to the same problems Jerome Frank has so carefully explained. In the idealization of certainty, the soul of man is laid open, and nakedly visible is the "father complex." Like other men, engineers need a pillar of strength

Man. New York: John Day Company, 1942. Chap. II.

[3] *T. V. A.: Democracy on the March.* New York: Harper and Brothers, 1944.

on which to rest their thoughts and activities. Indeed, they are even more susceptible to this complex than other men because their everyday activity makes them slaves to certainty.

THE field of human relationships, however, is one of uncertainty. It is a changing world, largely because of the effects of the very inventions which the engineers themselves have introduced. Yet, conditioned by his dependence on the certainties of science, the engineer refuses to recognize the social, economic, and psychological changes that are going on around him. Thus, he is a willing subject to the conventions of society, not their master. In social and political fields, his initiative is nil, his spirit weak, his thoughts outdated. Using his original concept of the world as the base for his opinions, exactly as if it were an unalterable physical law, he is hardly in a position to take over leadership of these foreign fields.

A few examples will serve to bring this theory concerning the viewpoint and practice of the engineer into closer accord with facts: First, the engineer generally has a marked distrust of government, of politics, of social and psychological progress. Second, the engineer is excessively distrustful of labor organizations; unions have found it virtually impossible to organize engineers. Third, politically the engineer is extremely conservative, and, concerning social problems, "unaware" would be a very apt description of him. Fourth, the recent war, which has shaken the world's philosophies, has failed to penetrate the engineer's shell of indifference. Engineers have failed to recognize the fact that the war put meaning of a very high level into the work of engineering. It is no exaggeration to say that the engineer, in this war, has been as neutral ideologically as the raw material—the steel, the oil, the earth—with which he worked. Fifth, the engineer insists upon the premise—indeed, it is axiomatic—that engineering's function ends with production; the use of the product is something over which he has no control and about which he does not care. Such a viewpoint means nothing less than social irresponsibility and the absence of moral values in the profession. Sixth, various groups of organized engineers in the United States have recently made frank efforts to make their members aware of their individual responsibilities in a democratic community. We may with good reason suspect that the campaigns will face a stone wall of apathy, and latest indications confirm this suspicion.

All of the facts stated so far are serious evidence that the importance of the technical men in our society—particularly for the future—is not apt to be matched by the contribution of these same technical men to the maintenance of the structure and soul of our democracy. If the technical men remained servants of our civilization, their lack of interest and their social irresponsibility would be a matter of individual concern only; but that is not the case. We need their ability to administer our rapidly advancing technical society, and their advancement to control in the industrial field makes it imperative that their sense of responsibility and their

ability to contribute to the spirit and life of our civilization be consistent with the great powers they will wield.

For there is no denying that our immediate problems are not in the field of production efficiency. We shall continue to have tremendous progress in this field—for the march is steady—but the distributive phase of our economy, rather than efficient production, is the keynote to the welfare of the country. We have had adequate production efficiency for decades, yet the catastrophic years of the thirties and the second World War occurred. Fully exposed, our nation's economic problems appear before us: equitable distribution of our production, greater economic security, and a stable economy.

Engineers, whose forte is efficiency, must become adept statesmen in dealing with economic and social problems, if they wish to share in their solution. The time has passed when increased production efficiency, at least in the United States, is of paramount value; the basis for a rich, varied, and secure life is now at hand. From the standpoint of emphasis, equitable distribution of our production and economic security for the individual must be the goal of our efforts. The value of engineering advances is truly measured only by man's ability to utilize these advances for man's benefit; as advances, in themselves alone they are barren triumphs, shorn of significance. Clearly, the engineer in his professional capacity is not the man to solve our present problems; his value lies in his use of engineering knowledge to solve the intricate social problems which are born of technical advances.

SO WE come to the responsibility of our educational system to offer us men suitable for the needs of the times. So far as I have been able to learn, only outer fringes of educational circles are thinking seriously about the problem. With few exceptions, engineering educators are still training in engineering to the bitter end. But those few exceptions give evidence of some realization of the new rôle the engineer will be playing in modern society.

Our principal problem arises from the fact that in our American universities the top students and top minds are leveled to the lowest common denominator of all our candidates. The battle between education for leadership and education for the masses arises to plague us again. That a compromise is possible in this difference of opinion is quite clear; yet, from the standpoint of the present problem, no such compromise has been made. Engineers still take their four years of basic training in subjects which deal strictly with engineering, with practically no variation in curriculum throughout the wide stretch of the country, and with only slight differences in the levels of academic standards.

Clearly, provision must be made for a number of our engineers to integrate an engineering curriculum with the equally necessary liberal-arts courses which will give them the breadth and background to cope with broader general problems. Something more closely akin to the planned program for medical students appears logical—a broad training first, with technical training later.

Of course, many students graduate

from our liberal-arts curriculum, after concentrated years of effort, without absorbing the spirit of the ideas offered them. We cannot expect the engineering schools to successfully teach both liberal arts and engineering in four years, when the liberal-arts school often fails to do so with liberal arts alone. But that is the narrow way of looking at the problem.

By way of suggestion, let me recommend a course in engineering and administration which would combine the fundamentals of engineering, business administration, and liberal arts. Six years of courses, fully integrated, arranged in careful sequence, and properly taught, would be a suitable period, although from the standpoint of immediate change a five-year course appears more feasible at the moment. A Master's degree could be given for the work, and both a Bachelor of Science and a Bachelor of Arts. This would be a combination of engineering and the humanities in exactly the proper proportions.

Not all engineers should be required to take this curriculum. As in other professions which admit of specialization, many engineers narrow their work to the field of straight design, or applied research, or special testing, or other phases of strictly physical science. In those cases, the excellent tools they now obtain in engineering schools are the only professional tools they need to carry on their work; but for those engineers who will be leaders in the future, there is a huge job of basic education to be accomplished.

This point needs emphasis, for we have not been looking at education in this way. The Harvard Report, in a summary of present educational needs, emphasizes not the professional requirement but, rather, the general requirements for education in the liberal arts. It points out that each of us needs a general education for citizenship in the interest of the future of democracy, but it makes the tacit assumption that the experts in the field, the men trained for the top, are adequately equipped for their responsibilities. Yet our engineers, efficiency experts trained in techniques and in production and design, who are assuming the reins of industrial leadership and in the future may hold the reins of government itself, are unequipped for their responsibilities. It may well be the case that we are not satisfying the minimum demands of citizenship training, but that is another problem. The point here is that our professional men who may be future leaders must be prepared for both professional work and democratic leadership.

Moreover, it is an interesting fact that the engineering field has been capturing young men of ability in competition with the liberal-arts field; these men, as has been pointed out, never can completely cut their ties. Hence, our country as a whole gains in material progress but loses in social leadership.

To paraphrase the apt comment about war and generals, social problems are far too important to be dealt with by engineers. Yet the trend of our economic and social development points in that direction. Somewhere must be found the men who can combine the abilities requisite for the task. The problem is not a new one but it is becoming critical. Our educators must not provide too little too late.

Veterans Challenge Higher Education

By EDWARD C. McDONAGH

Not Insurmountable if Recognized

COLLEGES and universities are facing perhaps the greatest challenge in their history as a million veterans seek the ways of higher education in America. These deserving students of the sophisticating experience of war and military service will certainly challenge many of the sacred and accepted practices of college training. The questions asked Army counselors by separatees anticipate many of these demands with a realism that merits the serious consideration of college administrators and professors. Colleges and universities will have to meet the earnestness of the veteran with a dynamic appreciation of his probable rôle in our society. Veterans have sacrificed much to attend our institutions of higher education, and our colleges must assume a responsibility toward each veteran accepted as a student, or there may be dangerous repercussions in the years to come from the cynicism of alumni veterans.

Institutions of higher education will be challenged by the variety of students enrolled. The fall semester of 1947–48 will enroll the most diverse student body in the history of higher education in our nation. Not only do the veterans alone represent a tremendous range of experience and travel, but the combination of veteran, young ex-war worker, and young high-school graduate threatens to tax the imagination and ingenuity of the college instructor in reaching all levels of student experience in his lectures. The extrovertive realism of the veteran may arouse the deep concern of the idealistic and youthful civilian student. Attitudes of some veterans toward nationalism and participation in world affairs may not necessarily square with the overt ideals and goals of the recent war, and as participators in bringing victory to the United Nations they may feel that their convictions are well grounded in pragmatic experience. Hence, the somewhat negative and disillusioned attitudes of the veteran will challenge idealistic persons on every front. Participation in this world war has not necessarily made veterans international-minded.

Teaching in institutions of higher learning will be complicated not only by the diversity of civilian students, but by several distinctive types of veteran students. Some of them will be lacking in adequate factual information to continue advanced work in their field of interest. Thus, the type of refresher training necessary for such students poses a thought-

provoking question. Should such students enroll in the next course with the hope that the preliminary review presented at the beginning of the course will be sufficient to reteach old information? Or should there be refresher courses? Should these refresher courses be segregated for veterans? Or should the institution encourage the veteran to take a modest program of studies and audit previous courses to build up apperceptive masses of information? Many veterans will want to carry heavier than average loads to compensate for the time lost in service. Colleges and universities will have to curb their eagerness to overcompensate, lest too heavy an assignment of courses prevent them from doing justice either to themselves or to the courses.

The veteran-student who is a professional escapist will present a problem to college authorities. He may find that attending college under the general provisions of the G.I. Bill of Rights offers an easy adjustment to life, a respectable way of utilizing one's time. The professional student is not a new phenomenon on the American campus; however, when he comes to college as a veteran-student, detection becomes difficult. Some of these persons managed to learn the fine art while in the Army, and in some instances the Separation Form 100 may indicate that the veteran spent the greater portion of his time attending technical schools in the Army. It is nothing short of amazing how some of these persons, by taking advantage of every change in policy regarding schooling, managed to get themselves assigned to advanced and related schools of their principal military specialty. The number of students who succeeded in this practice, however, was meager, and when commanding officers discovered the true objective of such soldiers, assignments were given that suddenly parachuted them to cold reality. Colleges and universities can discover these students by their complete lack of interest in anything but more schooling. Colleges and universities must not become substitutes for Civilian Conservation Corps or public works. The challenge is to direct the interests of the professional student to a terminal course with a definite vocational calling in view.

Institutions of higher education will be faced by the problem of whether or not to grant admission to the non-academic student. Unless colleges reject students who are not sufficiently well equipped intellectually to profit from academic work, they will be filled with persons who should be learning a useful trade or doing something within their intellectual scope. Objective tests can be given to determine the general abilities possessed by prospective enrollees. Prospective students who do very poorly should be told that according to the test results they may find college work difficult. Of course, to those students who compensate by constant attention and a great desire to achieve, the tests merely serve as a warning. Regardless of tests and eagerness to achieve, it will be a challenge to an instructor to fail a veteran-student who has earned a Purple Heart and Bronze Star Medal. Common sense cautions us to perceive the probable bitterness of this former combat soldier. If it develops that the young veteran does not possess the mentality or drive to succeed in college, we have an obliga-

tion to see that we have helped direct him to some type of training that will be rewarding and interesting to him. We cannot fail these students if we remember that the peace we enjoy was won by combat soldiers with the support of all rear-echelon men. If we reject veteran-students without attempting to find a suitable substitute for the course or training sought, we are certainly guilty, in his eyes, of a manifest lack of interest in his welfare.

The colleges and universities must provide the veteran with sound educational and vocational counseling. It may be to the benefit of all concerned if college authorities will admit frankly that the task of finding suitable employment for graduates will be a difficult one. It may also be logical to admit that colleges and universities can prepare men and women for opportunities, but that society remains the granter of opportunities. Hence, if colleges and universities accept the veteran-student without sufficient warning of the probable difficulty of securing employment for their graduates, veterans as alumni may heap ridicule upon institutions of higher education for appearing more eager to accept the government-paid tuition than to assume some responsibility for the placement of graduates. Veterans will appreciate the honesty and integrity of administrators who admit that there are economic risks in attending college, and that vocational security and education are not necessarily dependent on each other.

Alert vocational counseling by the colleges and universities will make clear to veteran-students the best available information obtainable as to the probable job opportunities in the fields of respective interest. The information about job and vocational trends published by the United States Department of Labor cannot be overlooked. It is the challenge of the faculty counselor to make certain that the veteran as a student has some clear idea of the probable job opportunities in the course now pursued. A tremendous amount of literature is being published on this topic and in the larger institutions one faculty member could devote full time to the project of assembling and extracting pertinent information from current publications on the vocational trends in the major occupations. Each veteran-student should know the employment prospects, the working conditions, and the general salary levels of his chosen occupation.[1] For the veteran the challenge of jobs is a real one, and the college and university cannot neglect to aid him in every way possible.

EVALUATING the military experience of veterans and converting this experience into academic credits will be a difficult task for educational counselors and registrars. The American Council on Education has attempted to recommend the amount of academic credit that could be derived from Army Service Schools and Technical Training Programs. Achievement and developmental tests have been constructed which will assist in measuring the end-product of military experience. Naturally, the veteran has learned much about travel, people, customs, and geography in his

[1]The "Occupational Briefs" prepared by the National Roster of Scientific and Specialized Personnel should be available for the perusal of veterans.

contact with international strangers. If the veteran-student has the general informational background of a college Sophomore, perhaps he should enroll in college at this level. If the veteran-student knows the basic principles of freshman English, there is little reason why he should take the course. In some instances, the course requirements might be met by simply permitting the veteran-student to take the final examinations for particular courses. In all subjects in which he received an average score, he could be given credit for the course, and permitted to enroll in courses which offer a more real challenge to his ability. There will not be so many students who can benefit by this plan, but, for those who can, it is one way of helping them make up for lost time. Perhaps this scheme could be broadened to include all entering students.[2]

In some instances the veteran-student may be tempted to challenge the accepted codes and rules of colleges and universities. Deans of men and women probably ought to prepare themselves for some good questions as to why there are particular rules. Regulations may need to be justified by something more substantial than tradition. No doubt the usual insistence by college deans that women students be in their rooms by an early hour, that dances be properly chaperoned, and that students attend classes regularly may seem a bit confusing to the veteran of an occupation assignment in the European theater of operations. Old-fashioned rules of conduct will be appraised at their face value, and compulsory chapel may have a difficult time being justified in some institutions.

WILL the universities be able to absorb the probable number of veteran-students contemplating higher education? Where will the married students live? No doubt this is one time when college administrators can build a larger physical plant than normally needed, and the temptation to succumb to colossal desires for new buildings and grounds must be controlled. Unfortunately, physical assets, buildings, and grounds on a campus seem to strike the eye of presidents and trustees more than securing competent faculty members. Materialism has invaded the college campus too, but we must recognize what the buildings are used for and the persons instructing and learning in them. Existing buildings can be used more by scheduling classes earlier and later in the day. The normal building program should be planned so as not to overemphasize buildings to the exclusion of other worthy needs of college or university. However, the large veteran enrollment will certainly give the president who is bent on an extensive building program a seemingly logical basis for his demands.

As the war emergency ends, the faculty emergency begins in higher education.[3] Faculty members have been retiring, the graduate schools have not been producing enough to meet the normal needs, and the increased enrollment will force institu-

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[2]More regarding this suggestion will be found in the author's article, "Criteria for College Graduation," JOURNAL OF HIGHER EDUCATION, XV (May, 1944), pp. 257–59.

[3]For more on this point, *see* "Some Hints to Professors" in Winter, 1945, issue of *Bulletin of the American Association of University Professors* (pp. 643–47).

· With the · Technicians ·

Younger Faculty Members and University Policy[1]

A dozen years have now elapsed since former President Elliott of Purdue first appointed the faculty committee which he called the "Committee on the State of the University." The unusual character and purpose of the committee are clearly, though prosaically, described in the formal statement of its duties: "[It] shall provide for a wider participation of the younger members of the faculty in the consideration of the plans and policies of the University which relate to internal matters, and shall make a continuing study of such matters." An article by the permanent chairman of the committee elaborates on the function and duties of the committee, and describes some of its early activities.[2]

A committee granted such broad scope can engage in activities of considerable importance and benefit to the university, or it can merely waste the time of its members and cause annoyance to others. There is evidence that the majority of the Purdue staff approves the committee and its work, although occasionally someone refers to it as "the gripe committee" or "a bunch of communists." These derogatory terms are applied because the committee has taken an active part in some controversial matters of academic policy.

[1]Reported by J. Norman Arnold, Department of General Engineering, Purdue University.

[2]Murphy, Charles B. "Faculty Pioneering," JOURNAL OF HIGHER EDUCATION, VII (February, 1936), pp. 59–62.

A more explicit and objective indication of the committee's activities is given by the following summary of the subjects of the 54 reports which have been submitted to President Elliott during the past twelve years:

	Number of Reports
Of concern to students, primarily—	
Scholarship (marks, student honesty, probation)	9
Examinations	3
Class-attendance rules	3
Establishment of student services (reading clinic, psychological-service bureau)	2
Of concern to faculty, primarily—	
Economic status (salaries, pensions, sabbatical leaves)	7
Insurance and health services (medication, hospitalization insurance)	3
General welfare (teaching loads, service reports, recognition of good teaching, faculty lounge, academic freedom)	7
Faculty organization (faculty meetings, composition of faculty, general organization, establishment of a general college)	5
Of general concern—	
Campus regulations and services (noise, safety, parking, smoking, information and guide service, bookstore, motion pictures)	8
Curriculum (cultural opportunities, nontechnical studies, quarter plan)	4
Student-instructor relationships	1
Adoption and change of textbooks	2

The committee possesses advisory powers only, with no authority to enforce the recommendations which are a part of most of these reports. However, a surprisingly large number of the reports have been approved by the Executive Committee and the Faculty. Some required and received approval of the Board of Trustees.

Adoption of committee recommendations has been highest in the group of 17 reports primarily of student concern, although the situation created by the war and other evolutionary changes have outmoded some of these,

so that current regulations regarding marks, student honesty, probation, and class attendance are not exactly the same as those the committee at one time recommended.

Among the 22 reports dealing with matters of primary interest to the faculty, the several important proposals on the establishment of a retirement annuity plan, hospitalization insurance, and an extension of the privilege of sabbatical leaves have been adopted in nearly the form in which they were submitted. Some of the reports on salaries have included general and indefinite, rather than specific, recommendations. Hence, it is not possible to say whether these recommendations have been completely adopted. However, they have been partially adopted. The committee proposal of a lounge for the exclusive use of the faculty has not been adopted. Election of some members of the faculty to the Executive Committee and to the Committee on Promotions, instead of their appointment by the President, has been in operation for several years. A majority of the faculty favored the election plan, but many were opposed to it. In the most recent election of two members to the Executive Committee, more than two-thirds of the faculty voted.

With the exception of the establishment of a University bookstore, the committee recommendations in the group of 15 general reports have been partially or wholly adopted.

Although 77 per cent of the reports have not been more than two typewritten pages in length, it often requires many hours of discussion and several revisions of a proposal to arrive at a compromise acceptable to all the members. However, a large proportion of the final reports have been approved unanimously.

The committee has been more active than many faculty committees in submitting from 3 to 6 written reports a year. During one recent year, meetings were held more than 30 times, frequently for two-hour sessions. The average attendance has been 8 of the 10 members. Other tasks, not represented in the tabulation of reports, have taken committee time.

Early in 1944, the committee recommended that "faculty meetings be made more vital and of greater general interest" by the appointment of a planning-and-steering committee to "organize a discussion period and see that, prior to the time of meeting, adequate thought be given to topics for discussion." By action of the faculty the recommendation was approved and the Committee on the State of the University was designated to carry out its recommendation. In performing this duty, the committee persuaded from 2 to 4 faculty members, representing different points of view, to present short talks at each meeting. Among the topics discussed were the accelerated program of education, objective testing at the university level, economic status of the faculty, and the improvement of registration.

Probably the most laborious committee enterprises were the 30-page report on examinations and the 9-page report on teaching loads throughout the university. Unfinished tasks which the committee, by vote of the faculty, has been asked to perform include a

survey of the economic status of the faculty, formulation of a statement of the functions of Purdue University in a democratic society, and a study of the organization of the faculty.

Except for the chairman, membership on the committee is rotated, 3 members being appointed each year for a three-year term. In this way, 49 persons have served on the committee in twelve years, two of them for a second term. Resignations and substitutions account for the fact that some persons served less than three years. At the time of their appointment to the committee, almost half of the persons held the rank of instructor. However, the appointees frequently have been promoted during the term of service on the committee. Occasionally, associate professors have been appointed to the committee. The membership at any one time usually has been composed of 2 or 3 associate professors, 3 or 4 assistant professors, and 2 to 4 instructors.

The questionnaire of the Committee on Committees aroused keen interest among the faculty in the Committee on the State of the University. Twenty-four persons expressed a desire to serve on the committee. Only one other committee was preferred more frequently—the Graduate Council, by 25 persons.

The facts with which this paper deals have been expressed as impersonally and objectively as possible, but the conclusion is distinctly personal. As a member of the staff during the entire existence of the committee and as a committee member for three years, it is my belief that the committee serves a number of important and worth-while purposes. The experience of membership on the committee develops in the individual an understanding of the workings of the university organization and an appreciation of some of the difficulties which confront administrative officers; it promotes a sense of responsibility for the welfare of the institution, its staff, and students. The committee is sensitive to some of the half-felt group needs, difficulties, and desires of the staff and students, and responds to the President in a more truly representative manner than a committee of deans. In my opinion, the growth and development of staff members who serve on the committee and the ideas for solution of difficulties which are generated by the committee are of great benefit to the University. I might add that other members of the faculty concur in this opinion.

Purdue University is indebted to President Elliott for his wisdom and foresight in creating the committee and for his encouragement of it in some of its difficult times. Other faculty members, including some administrative officers, have aided by suggesting important problems for committee consideration and by appearing before the committee when asked to do so. Also, Mr. Murphy, the permanent chairman, has played an important part in steering the committee away from matters which concern only a segment of the university to those of importance to the entire university. His patience and perseverance have been necessary to bring about agreement in the committee on some problems regarding which, initially, a hopeless deadlock seemed inevitable.

Great Scientific Literature and the Teaching of Science

In an attempt to determine the desirability of the use of original scientific papers as reading matter for introductory courses in the natural sciences, a large state university recently carried on an experiment with two classes of 40 Freshmen each. This study is reported by Thomas S. Hall in the winter issue (1947) of the *American Scientist.* A special grant from Purdue University financed the work of selecting, editing, and in some cases translating, the papers to be read.

The reading was designed to encourage beginning biology students in three activities: drawing inferences from different kinds of data, reading an account by a great scientist of that scientist's reasoning from the same data, and evaluating critically both their own and the scientist's reasoning.

The materials selected were complete scientific papers or parts of longer works, ranging from 500 to 5,000 words in length, chosen for the writer's explanation of "*why* he believed *what* he believed about the subject under discussion." They included, among other authors and subjects, Harvey, on the circulation; Pavlov, on the conditioned reflex; McDougall, on instincts; Freud, on behavior; Darwin, on evolution; and Mendel, on heredity.

The two groups of students, to whom the papers were distributed in mimeographed form, were subdivided, except for one weekly lecture, into separate laboratory-and-discussion sections made up of 20 students each. Three times a week these sections met separately. Students were required to make a painstaking analysis of the various papers read, each one of which was discussed individually in one or more 90-minute periods. Throughout the course the instructor asked questions carefully framed to elicit information from the students about the readings assigned.

At the conclusion of the course, an investigation into the reactions of the students who took part in the experiment was conducted by means of a questionnaire which they answered anonymously. Of 68 students questioned concerning the effect which, in their opinion, the use of original scientific papers had upon the interest and value of the course, 60 rated this course their most rewarding one; 58 rated it the most enjoyable. Surprisingly, 56 stated that the use of the readings was the most enjoyable activity connected with their study of biology. Naturally, there was some adverse comment on the difficulty of the approach to scientific information and activity which the papers presented.

Admitting that it was not in any sense a critical experiment, and that the significance of the students' evaluations had obvious limitations, nevertheless the project confirmed a number of beliefs held by the teachers before the experiment was made, concerning the advantages of using original scientific papers in the teaching of science: first, the propensity of students to learn and recite in parrot fashion can be to some degree counteracted by the practice of tracing the derivation and analyzing the validity of the idea or activity involved; second, works of established scientific worth command the interest of the college Freshman to as great a degree

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·The·Reporter·

THE Hungarian Ministry of Education offers tuition and maintenance for the academic year in return for similar provisions for Hungarian students made by American colleges or universities.

A NEW course in Human Nature and the Social Order was offered to students, at the beginning of February, by Western Reserve University. It deals with the individual both as a psychological and a social being and with his social problems. Classes are conducted as seminars or lectures, and the students are encouraged to do original research.

A TWO-YEAR program began in January at Washington and Lee University which includes the raising of $3,000,000 to be presented to the university on its two-hundredth anniversary in 1949. The fund will be used to provide 130 scholarships in memory of the students who died in service during the war, and for general endowment to finance increases in teachers' salaries, additions to the staff, and improvements in the plant.

TRAINING for airline hostesses is being offered in co-operation with major commercial airlines by the Air Center of the University of Denver. Following the University's development plan, which stresses University co-operation with business and community interests, the new program of training air hostesses was inaugurated with the opening of the winter quarter. Applicants for admission to the course must have a minimum of 5 quarters of collegiate work, must pass a physical examination, and must be approved by a personnel director of a recognized commercial airline. The training will consist of one quarter of specialized work.

A GIFT of $200,000, in memory of Nami Jafet, has been made for the construction of a library at the American University of Beirut. This is the first gift of an entire building received during the Fund for Near East Colleges' current campaign for $15,000,000.

THE scientific library of the late Chester H. Thordarson, electrical genius and inventor, has been purchased by the University of Wisconsin for $300,000. This library is a collection of eleven thousand volumes that record the scientific discoveries of mankind and is valued at $1,000,000. Money for the purchase was obtained from a half-dozen funds which have been given to the University.

THE American Library Association adopted a resolution at its midwinter conference urging all libraries and library organizations to utilize "every means at their command . . . to advance a true understanding on the part of all people of atomic energy and its meaning for civilization."

Appreciation of the efforts of United States officials in behalf of international control of atomic energy was expressed and intensification of those efforts was urged.

A GIFT of $1,800 has been made to Indiana University by the Indiana Visual Aids Company of Indianapolis, for the purpose of employing graduate assistants to undertake studies on the correlation of films with the more widely taught subjects in Indiana schools. Applications for assistantships, fellowships, and part-time positions should be submitted to L.C.Larson, director of the Audio-Visual Center, Indiana University.

A REVISED curriculum at Union College is designed to give each stuent "a greater common understanding of the other man's basic problems, and a basis for co-operation with other specialists in the gigantic tasks of citizenship in the postwar world." The program will affect all students in the divisions of humanities, social studies, and science. To a lesser degree, it will influence students in the division of engineering and students studying for the B.S. in chemistry. It is a revision of the divisional plan adopted in 1934.

UNDER the leadership of Willibald M. Ploechl, formerly of the faculties of the University of Vienna and the University of Nymegen, and now visiting professor of canon law at the Catholic University of America, the Canon Law Society of America has conducted a book drive during the past year to obtain volumes on canon law, comparative law, and philosophy of law to rebuild the Canon Law Institute of the Catholic University of Nymegen, Holland. The books already dispatched to Holland have assured the restoration of the Institute. Additional volumes are needed; donors are urged to send their gifts to the American Committee to Aid the University of Nymegen, 5 Beekman Street, New York City 7.

IN A course on nineteenth-century history given by Mr. Keppel-Jones, professor of history at Witwatersrand University, the students are given a choice of concentrating on the history of Britain, the United States, or France. Last year—the second in which the course has been given—more than half the students chose the United States. The course is believed to be the only one in American history given in South Africa.

THE system of clinical lectureships and internships used in medical education is being adopted by the University of Michigan School of Business Administration. One or the other of these methods is now in use in five major areas of study: real estate, retailing, institutional management, accounting, and investment banking. The clinical lectures or conferences are conducted by business leaders; most of the internships are provided through on-the-job summer training periods with firms in Detroit and Chicago.

RECORD of Chemical Progress is the title of a series of lectures to be given by eight leading scientists of the United States at Wayne University during the late winter and early spring months. The series will begin with an address on "Structure of

Polymers in Solutions" by Peter Debye, chairman of the chemistry department of Cornell University and Nobel Award recipient. Sponsorship of the series is being shared by the chemistry department of the University and the International Society of Friends of the Kresge-Hooker Scientific Library.

A GRANT of $70,000 has been made by the Cleveland Foundation to Western Reserve University, toward the support of the Elisabeth Severance Prentiss Department of Preventive Medicine. This department was created in 1945, following the receipt of a gift of $606,000 from the estate of the late Mrs. Elisabeth Severance Prentiss, Cleveland philanthropist, to the University. Five members of the Commission on Acute Respiratory Diseases, of the United States Army Epidemiological Board, joined the Department this year, with Dr. John H. Dingle, director of the Commission, occupying the Elisabeth Severance Chair as professor of preventive medicine. Work done by these medical scientists as members of the Commission is being continued at the University, and plans are under way for expansion of their activities.

SIX fellowships, each amounting to $1,500, have been established in the Department of Speech and Drama at Stanford University, four for actors and two for theater technicians, costumers, or designers. The person applying for a fellowship in acting is required not only to have a college degree in drama, but must have been actively engaged in professional or recognized amateur theatrical work for two years. Preference in the technical fellowships will be given to persons holding degrees, but applications will also be considered from students in accredited schools or colleges who wish to continue their work at Stanford.

The fellowships are open to men and women under twenty-seven years of age. The fellows will be expected to begin their work at Stanford on February 1, 1947. They will spend eight months at Stanford, during which time they will carry on work in their chosen field and participate in the regular program of the drama department.

TEACHERS Insurance and Annuity Association, a non-profit corporation organized in 1918 jointly by the Carnegie Foundation for the Advancement of Teaching and the Carnegie Corporation of New York to provide economic security for college teachers, during 1946 wrote 62 new institutional retirement plans for 39 universities and colleges, 16 junior colleges and non-profit private secondary schools, and 7 research and scientific organizations. This is by far the largest number of plans inaugurated during any year of the Association's history and brings to 456 the number of T.I.A.A. plans now in force. At present, the number of policyholders is 45,000, as compared with 39,250 at the end of 1945.

THE editor of *Doctoral Dissertations Accepted by American Universities, 1945–1946*, Arnold H. Trotier, reports that the steady decline since 1941 in the number of dissertations reported in the volumes of this series has ended. The current volume lists 1,708 titles, a gain of 132 over last

year. The increases in number of titles reported occur in all of the main subject groups except religion.

Apparently the regulations which during the war enforced secrecy regarding certain graduate research projects, are still in effect. Seventy of the dissertations in this year's list are designated as "secret research"—forty-eight in chemistry; twelve in physics; four in biochemistry; two each in engineering and psychology; and one each in medicine and physiology. As in the past, the titles of many of these dissertations have been withheld.

MARRIED and single veterans alike at Stanford University spend about twice their government monthly living allowance, but very few of them so far have had to borrow any money. These are the findings of a survey made by students of the Graduate School of Business, under the direction of William A. Spurr, professor of business statistics. The single men, with a government living allowance of $65 per month, spend about $120 on the average and $90 at the minimum. The minimum cost of living for married veterans, who receive $90 from the government, is $140: the average couple spends about $180 a month. Single men spend on the average $20 a month for recreation; married men, $15.

Where does the extra money come from? The survey indicates that 85 per cent of the single veterans draw on savings, about 30 per cent have outside jobs averaging 12 hours a week, and 20 per cent are helped by their parents. Half of the married veterans draw on savings to meet excess costs, about 23 per cent have jobs averaging 15 hours a week, and about 10 per cent receive help from their parents. Nearly two-thirds of the wives of veterans work, most of them full time.

A PROGRAM is being planned by Ohio University to acquaint members of its community with the character and purpose of the United Nations. A university-wide steering committee, with the collaboration of the recently organized Athens Community Committee, will be in charge of it. Prominent persons associated with the United Nations will be brought to the campus to discuss the various agencies, including the General Assembly, Security Council, Economic and Social Council, Trusteeship Council, International Court of Justice, and the Secretariat.

IN THE forty-first annual report of the Carnegie Foundation for the Advancement of Teaching, President Carmichael emphasizes the crucial importance of higher education for American youth.

One sometimes gets the impression that the teacher, the central figure in the educational process, is a "forgotten man," and that effective teaching, the essential factor, is taken for granted. . . . There are three ways of attacking this problem [of improving the quality of teaching]: first, stimulation of faculties by incentives of various kinds; secondly, more effective means of measuring the results of teaching; and, thirdly, more adequate compensation for the teacher, which is necessary if abler men and women are to be attracted to the profession.

To document his statements concerning the economic plight of the teacher, Mr. Carmichael cites several studies and reports. One study of 70 colleges, including both public and private institutions, shows increases of compensation for all ranks of the

faculties between the 1939–40 and 1946–47 sessions was less than 20 per cent during a period when living costs for these faculty members increased more than 30 per cent. At the same time, additional income taxes actually reduced the net income in dollars.

Among the current activities which the Foundation has initiated to correct existing conditions are the experimental program of grants-in-aid for research and creative activity to instructional staffs in a number of colleges grouped around four university centers, and an attempt to prevent duplication of services and general confusion by merging nonprofit testing organizations which operate on a national scale.

THE University of Oslo has made preliminary announcement of a special Summer School for American students who have completed at least their freshman year, to be held from July 7 to August 16.

All courses will be given in English. There will be a general survey of Norwegian culture; courses in science; and courses in the humanities, including Norwegian language and literature, history, institutions, social problems, and arts and handicrafts. In addition to professors and lecturers of the University of Oslo, there will be an American dean of students and an American registrar on the staff of the summer school.

Men and women students will be housed separately at the Blindern Students' Hall, and classes will be held at the University's new Science Building, also at Blindern, a suburb of Oslo. Scientific field trips and guided week-end excursions to places of scenic and cultural interest will be arranged, and ample provision will be made for recreational sports.

Six semester-hour credits may be earned; a certificate will be issued to each student satisfactorily completing the course. American students wishing to secure credit should make the necessary arrangements with their own university.

It is estimated that the approximate cost of attendance, including fees and room and board, will be $250. To this amount must be added the cost of the round trip from the United States to Norway. The University of Oslo hopes to get advantageous rates for the ocean passage. Further information may be secured from the Oslo Summer School Committee of the Institute of International Education.

·Editorial·Comments·

The Princeton Study

PRINCETON UNIVERSITY, having celebrated the completion of two hundred years of distinguished leadership in higher education, seems determined to continue to make educational history. It will undertake a systematic analysis of the relation between student development and educational procedures. It is estimated that the study will require at least five years; it is made possible by a grant of $200,000 from the Carnegie Corporation of New York.

The over-all objective is "the systematic and critical examination of residential university life, including both instructional programs and extra-curricular activities, to determine, as far as may prove possible, their results measured by the intellectual, moral and physical development of the students." In other words, the project is an attempt to substitute "demonstrable fact" for "philosophical presuppositions and subjective personal experience" as the basis of educational policy.

So far as the writer knows, no study of this kind on such a scale has ever been attempted in higher education. President Dodds is right in observing that "the neglect to experiment more in search of factual evidence is surprising in a profession staffed by men whose lives are largely dedicated to the collection and transmission of systematic knowledge," and that "higher education is one of the few fields in which no substantial effort has been made to analyze factually its own materials, procedures, and product."

The Princeton investigation will be a university-wide project, administered by the office of the dean of the faculty and supervised by a committee representing all elements of the institution. The study will begin with statistical analyses of existing university records to ascertain the relationship between a student's standing on entrance, his scholastic-aptitude rating, his academic performance, and his extra-curricular participation. Later steps will call for the cooperation of students, alumni, and faculty, and will range from "tests of scholastic aptitude, of personality traits, of attitudes and motives" to possible "specific experiments in instructional techniques carried out under specified conditions."

We hope that the study will seek evidence concerning the actual effect of college training on the behavior of the student and alumnus with respect to the problems he faces as a voter, parent, consumer, and member of the community. For example, the project might well include an investigation using the matched-pair technique which would show whether college students and alumni "scratch their tickets" or vote differently from their parents more frequently than non-college persons. If such an investigation were properly conducted, particularly as regards an adequate number of cases and accurately

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··Reviews··

An Authoritative Record

THE AMERICAN RHODES SCHOLARSHIP: A REVIEW OF THE FIRST FORTY YEARS, *by Frank Aydelotte.* Princeton, New Jersey: Princeton University Press, 1946. xvi+208 pp. $2.00.

This book serves several useful purposes. It constitutes an authoritative record of the original plan for international scholarships which has become the prototype for many others, furnishes a brief but clear exposition of the Oxford system of education, and supplies a complete directory of all American Rhodes Scholars and their occupations, as well as an excellent guide for those seeking Rhodes Scholarships.

Frank Aydelotte, who was among the pioneer Rhodes Scholars and has been the American Secretary of the Rhodes Trust since 1918, is the best-qualified and best-informed man anywhere, on the subject of the American Rhodes Scholars. His intensely interesting and informative study can be read in two or three hours. It includes only six chapters with as many appendices. The latter include a discussion of the trustees and officers of the Rhodes Trust, the distribution of Rhodes Scholars by American colleges and universities, the distribution of Rhodes Scholars by Oxford colleges, comparison of records of Rhodes Scholars from the United States and the British Dominions in examinations, the American Rhodes Scholars by occupations, and a complete alphabetical directory.

Cecil Rhodes wrote seven wills which the author aptly states "constitute a kind of spiritual autobiography." They also form an evolutionary plan which first contemplated the political unification of South Africa, extending its objective later to a strengthening of the ties of the Dominions of the British Empire, and finally arriving at a concept of world federation of Anglo-Saxon peoples which would maintain world peace through educational contacts centering at the University of Oxford.

The evidence in this review of the first forty years of operation of the Rhodes Scholarships belies the impression that Mr. Rhodes was visionary. If his plan had been inaugurated sooner, and possibly upon a wider scale, one or both of the World Wars might have been averted. It is pertinent to note that of 1,112 American Rhodes Scholars who have actually been in attendance at Oxford, the average age is only forty years. By 1955, it may be expected that there will be approximately 1,500, and more of them will have reached the peak of their contribution. Mr. Aydelotte thinks that their effectiveness will be doubled.

It is well known that Cecil Rhodes hoped that Rhodes Scholars would seek public careers, but it is not to be concluded that he expected them to go overwhelmingly into political activity. Their choice of occupations is listed by number in the following order: education, 389; law, 236; business, 141; government service, 74; medicine, 55; journalism, writing, broadcasting, 53; academic work, 43; research, 36; religion, 35; and other occupations, 50.

Rhodes Scholars have achieved more prominence and rendered larger service than might have been foreseen. About two hundred are listed in *Who's Who In America*, and six are starred in *American Men of Science.* The author points out that "everyone knows the name of the former director of the O.W.I., the Bishop of Ohio, the President of the Chesapeake and Ohio Railroad, the Ambassador to Holland, the editor of the *Christian Science Monitor*, and the author of House Concurrent Resolution 25 in the Seventy-eighth Congress, which announced to the world the end of American isolation." Twenty-five have been presidents of universities and colleges, and 132 have achieved full professorships. Of those who have gone into the legal profession,

94 are members of leading law firms. This record of achievement could be extended almost indefinitely.

Approximately two hundred American institutions have prepared American Rhodes Scholars, the number varying from 61 to 1 per institution. Originally, the scholarships were awarded by states. In 1931, the British Parliament changed the distribution and placed it upon a district basis. Selections are now made from 8 districts of 6 states each, and the 32 annual appointments are divided equally among the districts, giving 4 to each. All Rhodes Scholars are required to take Honors courses. From the beginning, the academic record of American Rhodes Scholars for Honors has been better than the average for all Honors men at Oxford and, since 1931, it has been better than the average of Rhodes Scholars from Canada and South Africa but inferior to those from Australia and New Zealand. It is doubtful that the American Rhodes Scholars will ever be able to equal in competitive examinations the select group of Englishmen who hold scholarships, because the latter have better preparation in English schools for Oxford performance.

Writing as a Rhodes Scholar, I think I voice the sentiment of the entire group in saying that the emoluments and benefits that have accrued from opportunities at Oxford have excelled expectations on the part of the Scholars, if not on the part of the public.

JOHN J. TIGERT
University of Florida

An Undergraduate of a Hundred Years Ago

REMEMBRANCE OF AMHERST: AN UNDERGRADUATE'S DIARY (1846–48), *by William Gardiner Hammond.* New York: Columbia University Press, 1946. viii+307 pp. $3.00.

To read this diary of a college undergraduate of one hundred years ago is to find oneself for a short time the intimate companion of a young scholar of winning personality who is wholly human and alive. This truth reveals itself slowly; for the apparent stateliness and rigidity of the academic routine, and the apparent stuffiness of the social life of town and campus offer resistance at the very first. But these characteristics cease even to be apparent after a few pages, and the persistent reader soon finds himself transported into another social era, and quickly oriented; thereafter, this intimate daily record draws him wholly under its spell.

William Gardiner Hammond entered the sophomore class at Amherst in the fall of 1846, and for two years faithfully recorded his daily experiences. "Although this is intended for no eye but my own, yet I will here say that I shall not make this a record of all my doings, etc., but shall merely write down whatever appears to me to be worthy of remembrance" (page 7). We of today are grateful that whatever appeared to him worthy included glimpses of classroom and campus, study-hours and playtime, bits of discussion with teachers and intimate companions, social life in the town and at neighboring Mount Holyoke College, and his own meditations, both grave and gay.

Young Hammond was intensely interested in intellectual discussion among his fellow students, which was constantly being sown and fertilized by classroom studies. In fact, the most noteworthy impression made by these diary pages is a sense of the depth and richness of a college education in the forties. There was no conflict whatever between campus and classroom, but a perfect co-ordination to bring about those results for which the college was reared.

Yet this young man, who entered with such zest into classroom recitation, disputation, and written thesis, who discussed fine points of scholarship with his companions on long walks to Pelham or Mount Holyoke, who enjoyed the companionship of his teachers, was no "greasy grind" (or whatever was the equivalent term in his day). He occasionally recorded the texts of Sunday sermons, it is true, and commented upon the preacher's argument; but he also recorded the many times he slept through the service. His interest in fraternity politics was frankly recorded, as was his far greater interest in all pretty or

vivacious girls who came within his ken. In describing one of his calls upon a popular village maiden, he writes:

"F. Homes was there, and though he knew it was my farewell call, *would* stay, so the exercises of the evening were mostly limited to music and singing most divine from Jennie and a very little chat. When I left, she followed me into the hall as usual, bade me good bye, sent in a whisper her love to Tom, and then—then—then—not three times though, but only once—O 'twas the sweetest, purest—the abstract beauty, the *idea athanâte* (deathless form) of a kiss. It was not the voluptuous kiss of love, or the *lip-touching*, *tip-touching* of a prude, but the pure kiss of friendship, the *beau ideal* of kissing without alloy. If ever I forget may I be doomed, as Demosthenes says, *apothanein pollâ-kis* (to die many deaths)" (page 99).

At another point in his diary, young Hammond interrupts his own reflection long enough to record that he felt in exuberant spirits and so went over to South College and "nailed up the doors of all of the joes." There was no subsequent reference to that impulsive action, so we may only assume that it was a minor incident in the routine of college life.

Chancellor Hammond performed a real service to all students of our American college scene by preserving these youthful memoranda throughout his subsequent life of distinguished service to education. And Mr. Whicher has performed his editorial task with skill and restraint.

BURGES JOHNSON
Washington and Jefferson College

Distinguished Performance

GREAT TEACHERS, *edited by Houston Peterson*. New Brunswick, New Jersey: Rutgers University Press, 1946. xxi+351 pp. $3.50.

"This is a book about teachers—teachers in action in the home, the classroom, the seminar, the laboratory, the classics, the lecture hall. It is not a series of new profiles but a collection of first-hand accounts already written by former students, written from the heart in order to acknowledge a profound debt and to share a privilege" (page xv). With these words, which are a fair and accurate description of what follows, Mr. Peterson introduces his collection of twenty-two essays on twenty-five teachers.

Most of the men and women described are reasonably well known. Here are James Mill, Mark Hopkins, Charles Garman, Woodrow Wilson, John Dewey, William James, César Franck, Ralph Waldo Emerson. All but one were born in the nineteenth century, and all but two lived in, or have lived on into, the twentieth century. Most of them made their reputations in college or university work, though Mr. Peterson begins with five sketches of teachers of children and ends with six biographies of men who dealt primarily with adults. The book is in no sense intended to be a collection of the greatest teachers of all time, nor even of the greatest teachers of the nineteenth and twentieth centuries. One can think at once of other figures who might be included, and one wonders occasionally just why this person or that was selected, but these are matters of taste. Mr. Peterson set out to create an anthology of interesting accounts of interesting teachers of the past one hundred and fifty years. In this modest aim he has been successful. The result is a pleasant, stimulating, but not a great, book, which will be read by teachers and laymen with profit and enjoyment.

Education is teaching and learning. If we concentrate for the present on the former, the question at once arises, What makes a great teacher? No simple formula will appear in answer in the pages of this book. Some men taught by formal and polished lectures; others, through informal contact and discussion. No two were the same or followed similar techniques. What all possessed in common was a contagious enthusiasm for their subjects and studied or intuitive knowledge of the minds of their students. This is hardly a prescription for the aspiring teacher, but one of the early lessons in pedagogy is that there is no easy or simple method for distinguished performance. Each man must find his own solution, but there is food for

thought in these stimulating accounts of some of the great and the near-great.

JOHN W. NASON
Swarthmore College

A Work of Competent Scholarship

MAN AND SOCIETY: THE SCOTTISH INQUIRY OF THE EIGHTEENTH CENTURY, *by Gladys Bryson*. Princeton, New Jersey: Princeton University Press, 1945. xii+287 pp. $3.00.

Miss Bryson has produced a work of competent scholarship on the remarkable group of thinkers in eighteenth-century Scotland whose co-operative discussion of "moral philosophy" in its different aspects helped to lay the foundations of modern social science.

How it came that, after a century of fierce religious strife which completely paralyzed learning and the arts, there should have occurred, in a small country like Scotland, a revival of feeling and intellect that issued in master works in philosophy, history, economics, and literature is a question to which many answers have been given, none of them commanding general assent. Miss Bryson, in an introductory chapter, essays an answer. Scottish scholars, she points out, had always kept touch with continental thought through their wanderings and were versed in the main movements of European life. Bacon, Locke, and Newton, moreover, had made a deep impression on them and helped to free them from the narrow Calvinistic orthodoxy to which all but a few bold spirits like David Hume still found it necessary to profess conformity. This is true so far as it goes. The Scottish thinkers, while following their own course in a spirit of sturdy independence, were never parochial in their interests. Human nature was their central theme and they had a lively curiosity about all that concerned humanity past and present. Even so, this does not quite explain how they managed to achieve the combination of scientific attitude and personal interest which enabled them to make a pioneering approach to the problems of social relationships. They were apt pupils of Newton, but they steered clear of a mechanistic view of man's nature. They had much in common with the French rationalists, but like Rousseau they stressed passion and impulse and common sense rather than reason as fundamental elements in human behavior. The clue may perhaps be found in the fact that however critical they might be of much in contemporary religion, all of them (not excluding Hume) had a religious background and accepted the Calvinistic estimate of the personal worth of every human being. The Scottish kind of religion, then as now, encouraged a faith that inquires, drawing its inspiration from the deeper urges and insights of faith and yet requiring a formulation of the grounds of belief that satisfies the intelligence. In the case of the finer spirits (like the leaders of thought studied by Miss Bryson) who achieved intellectual freedom without becoming free thinkers, this double-mindedness led to a persistently honest attempt to take all the available facts into account in the understanding of man. They began with a view of humanity that made man the supremely important subject of study, but they drew the materials for their thought from a comprehensive experience both psychological and social, as social scientists have continued to do since their time.

The details of their psychology and their common-sense philosophy are set forth at length in Miss Bryson's well-documented pages. She has contrived to give the sense of a national movement of thought without blurring the individuality of the various contributors. The distinctive ideas of Francis Hutcheson, Adam Ferguson, David Hume, Adam Smith, and their fellows emerge from the topical presentation of their common themes of man as essentially a social being, and it is possible to see human sciences of today taking shape in their speculations.

May a Scotsman, who still finds himself very much at home in this eighteenth-century way of thought, carry one line of comment further than the author has done? In the forefront of the book stands a striking passage culled from John Dewey, insisting on the need to get back to the great guiding ideas within which, consciously or unconsciously, we all carry

on our thinking. The reviewer finds himself wondering, after perusal of this volume, whether it was not from Scotland that many of the characteristic American views of life came in the first instance. It is a thesis which finds support, among other things, in what Miss Bryson has to say about the influence of the Scottish moral philosophers in American universities up to the middle of the nineteenth century. Whatever the reason, Scottish philosophers to this day find easy kinship with American thinking.

WILLIAM BOYD
University of Glasgow

Illuminating Treatment

LABOR POLICY OF THE FEDERAL GOVERNMENT, *by Harold W. Metz.* Washington, D. C.: Brookings Institution, 1945. ix+284 pp. $2.50.

TRENDS IN COLLECTIVE BARGAINING: A SUMMARY OF RECENT EXPERIENCE, *by S. T. Williamson and Herbert Harris.* New York: Twentieth Century Fund, 1945. ix+154 pp. $2.00.

Often books reviewed in clusters have only one thing in common—a rough identification with a more or less similar subject-matter or mood. This little cluster is different. It deals with its common subject-matter, labor relations, in such a way that the two books supplement, rather than overlap, each other. Combined, they constitute a decidedly illuminating treatment of that subject-matter for the literate lay reader as well as for the technical reader.

In *Trends in Collective Bargaining*, the authors deal with the main issues, such as those presented by wages, hours, and job security, on which employers and unions endeavor to come to satisfactory terms through group agreement. Then they indicate the impact of recent events, most notably the war, on the collective-bargaining process and on the issues. To their discussion is appended a report by the Twentieth Century Fund's Labor Committee (a distinguished tripartite group representative of unions, management, and the public) on ways and means of strengthening the processes of collective bargaining. The entire enterprise represented by the volume is an outgrowth and extension of the earlier and more expansive Twentieth Century Fund study of *How Collective Bargaining Works*, published in 1942.

In *Labor Policy of the Federal Government*, Mr. Metz deals specifically with the policy and practices of the Federal government in relation to collective bargaining and collective agreement, and thus directly extends the discussion of the process itself in one of its most vital dimensions. This he also does no less decisively, if less directly, in covering such subjects as the policy of the Federal government toward union labor and conditions of employment such as those involved in wages, hours, and union preference. Also, in the process of covering virtually the entire water front so far as Federal policy toward wage earners is concerned, Mr. Metz presents the rôle of the Federal government in trying to settle labor disputes.

In doing this far-flung job, it is Mr. Metz's avowed purpose to be coldly analytical and objective, avoiding all "oughts." However, in such an emotionally surcharged field as that concerned with the relations of the Federal government to organized labor, this is probably a purpose to which only saints can hope to adhere continuously. Even given complete consistency of purpose, there still remains the technical problem of selecting from an enormous body of material that which conveys a perfectly unbiased picture. Something of the magnitude of this problem is suggested by the fact that the National Labor Relations Board, only one of many Federal agencies with which Mr. Metz deals, had over 77,000 cases presented to it for decision between June 30, 1935, and June 30, 1945, many of them moving into new and hitherto unoccupied territory. To locate the precise position of a board traveling over unfamiliar terrain at such a dizzy pace—at least on the broad array of issues with which Mr. Metz deals—is probably a superhuman task. Certainly it is such a rapidly evolving task that no delineation, however precise at the moment it was made, will last for long.

It was not my impression that Mr. Metz was completely successful in attaining the Olympian detachment which he

set for himself. Perhaps the difficulty was in transmitting a clear reflection of this detachment to his book. But that is hardly surprising, since in 284 medium-sized pages (of good readable type, happily) he essays to cover the vast territory indicated.

I have an even more definite conviction, however, that Mr. Metz has produced an extraordinarily useful volume. Its usefulness, as I see it, consists, first, in showing in outline form the whole vast panorama presented by what the Federal government does for, with, and about labor; and second, in clothing this outline with a broad sampling of what is actually done and how. This latter operation makes the volume something in the nature of a super-handbook which the Brookings Institution would serve the country well by keeping up-to-date, perhaps with the aid of a group of consulting editors representing both organized labor and employers.

Incidentally, the title of the book should be changed in the next edition. It suggests a coherence and consistency in government labor policy which is non-existent. "Labor Policies of the Federal Government" would be better, and a title which would give some indication of the fact that they are often working at cross-purposes, as Mr. Metz makes clear in his text, would be better still.

While entering mild complaints about titles, it should also be noted that *Trends in Collective Bargaining* is not a particularly descriptive label. The main body of the book by Williamson and Harris is an illuminating and gracefully written discussion of the internal workings of collective bargaining; and the report of the Twentieth Century Fund's Labor Committee is a preachment on how to improve them. But the divining of directions in which the whole business is going, which I take to be the essence of dealing with trends, is not conspicuously present. Indeed, in the main body of the book there is no treatment of perhaps the most significant of all recent trends in collective bargaining, that toward bargaining on an industry-wide or market-wide basis; and in its report, the Labor Committee deals with this type of bargaining as an advocate of it.

In this connection, it would be interesting to know whether or not the enthusiasm of the Fund's Labor Committee for industry-wide bargaining has survived the recent demonstrations both of the devastating concentration of economic power which is thus engendered and the use to which this power may be put. It seems to me that, in dealing with industry-wide collective bargaining, the committee was too closely focused on having a neat and efficient process, and not enough on the broad social and economic consequences involved. But that feeling is, no doubt, due to my conviction that the spread of industry-wide collective bargaining raises some of the most profoundly important social and economic issues of the era. I did not find in the committee's report what seemed to me an adequate recognition of that fact.

Though they make no special professions of scientific detachment, it struck me that the authors of the main body of the book (Williamson and Harris) are remarkably impartial, as between "capital and labor," in their discussion of the passion-rousing process of collective bargaining. Also, and more important, I found much of their discussion extraordinarily enlightening. I do not know where, within equally brief compass, there is to be found a better explanation of the relation between union "Work Rules and Technological Change" than is to be found in their chapter of that title. I also found their chapter on "Government Collective Bargaining" most illuminating. It was in the course of this chapter that I overcame slightly what had been my complete ignorance of the Fire Fighters Union (A.F. of L.), which seems to have been getting along very well for more than two decades while adhering to a firm commitment not to strike. I intend to learn much more about this union.

In the course of their chapter, "Wages," the authors remark, as others have, that "there appears to be no evidence that collective bargaining has raised labor's share in the national income," but they then move on quickly from that staggering fact. If it is a fact (there is a possibility that the statistics are twisted up in

some way), it is worth far more attention than it received in *Trends of Collective Bargaining*, or than it has received anywhere else for that matter. In their excellent chapter, "The Human Side," the authors indicate that they feel that collective bargaining involves values, such as that of human dignity, which would offer a justification for it even if no change in the national distribution of the proceeds of production were involved. But even so, the seeming fact that there has been no change is worth far more attention than they give to it.

The title, *Trends in Collective Bargaining*, suggests a book primarily for technicians. The book has much for them. But it is also excellent fare for the literate layman who is trying to understand the chronic hullabaloo on what is, accurately alas, often called the labor front.

DEXTER M. KEEZER
McGraw-Hill Publishing Company

An Effective Revision

YOU CAN TALK WELL, *by Richard C. Reager*. New Brunswick, New Jersey: Rutgers University Press, 1946. xvi+ 312 pp. $2.50.

Speech textbooks with deliberately "catchy" titles are sufficiently rare to cause some slight lifting of the academic eyebrow. Two such books have, within the last ten years, appeared from the pen of the same teacher, who, apparently, does not care a snap of his finger for the elevated facial adornment. In this, I quite agree with Mr. Reager, and have on occasion so expressed myself.

In 1938, Mr. Reager and Ernest E. McMahon, of the speech faculty of Rutgers University, published through the Rutgers University Press, a textbook called *Speech Is Easy*, which, I must admit, caused me to cock an eyebrow, myself—until I read the book. Now, eight years later, Mr. Reager publishes, through the same press, his *You Can Talk Well*, a larger, much better-printed, and altogether much more useful book than the earlier volume.

Both these books were written to and for the student. The author sees the speech situation, not from a teacher's angle, not from the academic point of view, but from the position of the student, whether collegian, businessman, or laborer, up against a specific problem. The author writes neither to please his colleagues, nor to make a mystery of speech, nor to engage in an academic discussion of speech theories. He frankly sets forth a goodly number of the commonest situations in which effective speech is a necessity for normal men and women, and then clearly and simply explains a number of tried and proven ways of meeting those situations lucidly, pleasantly, and with a measure of poise and effectiveness.

A comparison will show that *You Can Talk Well* is a revision, and a very good one, of the earlier book. By the splitting up or addition of chapters, material is more logically and effectively arranged, important omissions (in the opinion of this reviewer) in the first book are corrected, and important new material is added. The book shows the results of thorough, careful use and testing of the earlier volume in the crucible of the university classroom, the adult extension class, the businessman's class, and, in particular, in the training of our military personnel. I liked many things about the first book; I like many more about this one.

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Veterans Challenge Higher Education

EDWARD C. McDONAGH

[*Continued from page 152*]

tions to utilize existing faculties to best advantage. Considerable faculty mobility will be in progress. The larger schools will be able to secure the services of the better instructors in the smaller schools. Some colleges and universities will be tempted to use "assistants" as instructors in the lower-division courses, but such a practice will not be appreciated by

veterans. These veterans deserve instructors who are more interested in teaching than in securing an advanced degree. It may be necessary in some institutions to meet the challenge of large enrollments by having larger classes and by asking faculty members to teach an extra two hours each week. Faculty members should realize that any added teaching load is a temporary expedient and that provision will be made for material compensation or time off for research when the emergency no longer exists. Mature teachers will thus be appreciated by veteran-students. Whenever possible, faculty members who have seen service during the war should be named on boards of admittance and probation.

None of the challenges mentioned in this paper is insurmountable if recognized. Colleges and universities can meet the challenge the veteran offers as an opportunity to make higher education in America stand for the best in civilian life, yes, something worth waiting and fighting for.

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Great Scientific Literature and the Teaching of Science

[*Continued from page 156*]

as do standard textual materials; third, the use of original scientific papers as reading matter affords students a valuable introduction to creative and evaluative reasoning; and finally, practice in constructing and analyzing the patterns of rationally integrated ideas which are to be found in scientific papers is a worthwhile educational activity for students, since they must use similar techniques in solving problems and making decisions in all areas of life.

A Social-Science Comprehensive

WILLIAM G. CARLETON

[*Continued from page 134*]

vital questions of our age are increased tenfold when these questions are raised in sixty different classrooms by twenty-five instructors—all at the same time! Timorous administrators may be deterred by this ever-present threat to a college's public relations, but real educators will be challenged and stimulated thereby.

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The Princeton Study

[*Continued from page 162*]

matched pairs, it would throw light on the question whether college education actually contributes to the making of more intelligent and independent voters. Other investigations could show how the college man compares with the non-college man with respect to ability to listen critically to advertising blurbs and to recognize fallacies in editorial writing, attitude toward minority groups, habits of reading good books and listening to good music, and so on.

The Princeton study promises to be one of the most important developments in higher education in our time. We shall be disappointed if it does not produce highly significant results.

R. H. E.